The Builder.

VOL. XLIII. No. 2063. SATURDAY, AUGUST 19, 1882.

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The Activity of the Building Trades in 1881, *as shown by the Parliamentary Returns.*

IT is beyond the limits of the *Builder* to pursue into any great detail the general movement of the trade, commerce, and finances of the country, except in so far as the study may throw light on the probable activity of the building trades, the price, import, and distribution of building materials, and that change in the localisation of industrial activity which so immediately affects both the amount of rents and the demand for the construction of new houses. As to this, we have more than once called attention to the fact that the builder ollows closely on the heels of any movement that increases the shipping activity of special ports, towns, and harbours; and, indeed, that building may be said to march hand-in-hand with maritime activity.

It is, in this view, a matter for no little consideration to observe that the year 1881, for the first time in the present century, has witnessed, as far as statistics may be relied on, a direct check to our mercantile maritime movement. From the year 1800 to 1840 the growth of our shipping was without parallel, example, or approach in the history of the world. The tonnage that left our ports in 1840 was rather more than twenty-four times the aggregate amount of that which left our ports in 1800. Nor were these exceptional years; that marvellous increase was not made by fits and starts, but was as steady as it was swift. It was mainly due to the application of the steam-engine to industrial purposes, and to the immense preponderance which the possession of our coal-fields, and the command of machinery unknown elsewhere, gave our manufacturers in the markets of the world. As far as our inland communications went, our roads and their service were at their acme of perfection; our canals did the heavy work of transportation very cheaply, and our railways were just commencing their activity.

From 1840 to 1880 remarkable progress was no doubt made, but it followed a much diminished rate of annual increment, when we compare, not bulk with bulk, but percentages of growth. Our export tonnage was multiplied rather more than sixfold in this period. It may almost be said to have been created in the first forty years of the century; it was increased fourfold in the next thirty years, but the amount reached in 1872 was increased by only 36 per cent. by 1880. With that year, as far as figures yet go, the crest of the wave was reached. The tide has turned, and a sensible ebb has set in. We are far from asserting that the check is permanent; nor do we wish to take the disagreeable office of predicting misfortune. But it is idle to shut our eyes to facts; and the facts, as far as they are represented in the Statistical Abstract of the United Kingdom for 1881, are such as we now cite. The total tonnage of British and foreign vessels (sailing and steam), which entered and cleared the ports of the United Kingdom, from and to foreign countries and British possessions, in 1881, should have been, if the average increase of the last fifteen years had been maintained, about 800,000 tons more than in 1880. On the contrary it was 786,518 tons less, being a movement in arrear of almost equal amount to the expected movement in advance. The fact that this phenomenon has now occurred for the first time in the century is one that demands very grave consideration.

One other fact may be cited, in abatement, to some extent, of the menace of the foregoing. The diminution in the tonnage of cargo-laden vessels is not so great as the general diminution. For the last fifteen years the proportion of vessels entering or clearing our ports in ballast has steadily diminished, as compared with that of the cargo-laden vessels. In 1867, out of 32·7 million tons of shipping, 28·1 million tons were cargo-laden. In 1881, out of 57·9 million tons of shipping, 49·5 million tons were cargo-laden. The tonnage of cargo-laden vessels entered and cleared in 1881 was only 117,550 tons less than that in 1880. The number of men employed in the British and foreign trade was very slightly less in the latter year than in the former. But the vessels on the register, although 661 fewer in 1881 than in 1880 had a tonnage of 156,000 tons more. And the activity of the shipbuilders, so far from having experienced any check from diminution of traffic, has increased. The number of vessels built and first registered in the United Kingdom in 1881 was larger than has hitherto been known in any one year, with the sole exception of 1874, and was actually 24 per cent. more than in 1880.

If the great barometer of shipping tonnage thus points to change, the no less important indications afforded by the statistics of our mineral produce give the signal "set fair." The coal raised in 1881 was five per cent. more than the yield of 1880. The estimated value of the coal won, at the place of production, has followed the same ratio. The increase in the total value of the coal and metals produced in the latter year is not much less in proportion; the yield of 1881 being almost exactly the double of that of 1869. Putting these various returns together, it seems pretty clear that our home trade is increasing more than our foreign trade, a sign which, in itself, is one of comfort and of hope. Not that we would have the foreign business less, but that we would have the home business more. The activity of the builder is far more likely to be measured by that of the miner than by that of the shipper. In fact, while our purchases from the foreigner (so far as they can be measured by the total value of imports and exports) are 14·2 millions less in 1881 than in 1880, our sales to him are more by 10·6 millions sterling of value. This turn in the tide, at which we are convinced most men of business will rejoice, is not only promising in itself, but also to a great extent explains why the decrease in cargo-laden vessels is so much less than that in the general mercantile tonnage. In 1880 the excess of imports over exports was 124,000,000*l*. In 1881 it was only 100,000,000*l*. Without entering into any debatable matter with reference to the balance between our incoming and our outgoing business, it is tolerably certain that the more nearly an actual balance is approached, the less necessity will there be for the departure of vessels in ballast from our ports. It is, then, possible to reconcile a decline in shipping tonnage with an advance in national prosperity; and such, we venture to hope, is the true outcome of the returns.

It is, however, the fact that the gains arising from any profession or trade, including the property on railways, canals, mines, gasworks, waterworks, &c., as far as they are measured by the income-tax returns, are less by rather more than three per cent. in 1881 than they were in 1880,—less, in fact, than in any year since 1874, when the amount returned under this head was about 400,000*l*. more than last year. The owners' value of lands and tenements has increased by more than 2½ per cent. in the year; the occupiers' value is nearly stationary. On the whole, the income-tax returns show that the slight decrease in our wealth within the year of 1,200,000*l*., is the balance between the natural increment from economy,—spending less than our income,—and the decrement in the activity of trade. These returns, however, are not exactly parallel to those as to shipping and mining, as they are made up to the 5th of April, 1880, instead of to the end of 1881. The increase in the value of lands and tenements is due in no small degree to the builder, the valuation of houses in 1880 being 5,000,000*l*. more than in 1879. Since 1860 the value of houses has increased in England from 66,000,000*l*. to 100,000,000*l*.; and in Scotland, from 6,000,000*l*. to 11,750,000*l*.; while in Ireland it has sunk from 3,450,000*l*. to 3,160,000*l*. The extraordinary activity of building operations in Scotland, showing a duplication of value in fifteen years, must be due in no small degree to the immense impulse given to the industry of

the Valley of the Clyde by the improvement of the navigation of that river. And, considering the intense and increasing interest which our great manufacturers are taking in the subject of inland waterborne communication, as to which not a week passes without some fresh indication, we think that the difference in the annual value of English, Scottish, and Irish house property is pregnant with significance.

MEASUREMENT AND DESIGN.

At one of the Royal Academy exhibitions, not long ago, we were reminded by Mr. Marks, in his own peculiar vein of dry humour, that "science is measurement," the sentiment being illustrated by the representation of an aged and cautious *savant* carefully measuring the separate bones in the skeleton of a bird, with a view to establishing and noting down its proportions. The ornithologist's position in this case was a perfectly logical one, and the motto might, no doubt, be much more widely applied, and would include subjects coming under our special domain. To the engineer, for instance, science is measurement, — measurement of strain, of forces, of co-efficients of friction; almost everything which he does is reducible to measurement in one way or another, and the more accurate his measurement the better will his work be, and the more likely to prove durable. As has been indicated in an important article in our last number, there seems every probability that it was to insufficient and theoretically inaccurate measurement of wind-force that the lamentable fall of the Tay Bridge was, in a measure at least, to be traced, and that it was at least most improbable that its unfortunate engineer, though he cannot be held altogether free from blame, would have allowed so inadequate a margin of strength if he had been in possession of a more trustworthy theory on which to estimate the pressure of wind. And of course to that portion of the architect's work which is essentially practical the dictum applies as fully as to that of the engineer, in theory at all events; though, in fact, the architect is less often called upon to deal with structures in which the question of strength and stability occupies so completely the foremost place, and requires such nicety of calculation, because it is very seldom that he is called upon to build for practical security alone. The mere demands of architectural effect necessitate, in many cases, a larger margin of stability than an engineer would consider it his duty to allow consistently with the economics of construction. Apart from this, however, of course the architect's practical work is concerned with calculation and "measurement" in the same way as that of the engineer.

The question about which there has been, and no doubt will continue to be, much more difference of opinion, is, how far this element of measurement enters into and influences the other side,—the artistic side,—of architecture. There are, of course, two different relations of measurement to architectural design; that in which measurement is applied to ascertain the proportions of old buildings, and that in which it is used to evolve and regulate the proportions of new ones. Of the use of measurement with the former object we were reminded again by the account of the labours of some American students, whose first report of their work in Asia Minor was noticed at some length in our last number. The employment in which our American allies have shown such praiseworthy zeal and desire for exactitude is exactly analogous to that of Mr. Marks's ornithologist measuring the skeleton. Measurement is the most certain or the only way of arriving at exact conclusions in regard to the main dimensions of an edifice, and the proportions of its details so far as they are measurable, and of gaining ground on which to base any theory in regard to the canon of proportion which may have been followed by the original builders, or as to whether or not they did follow any canon of proportion. In this respect the more recent students of architectural remains in Asia Minor have no doubt valid cause to complain of their French predecessor who has left such an unfortunate character for inaccuracy; though if all draughtsmen and measurers who had published inaccurate drawings of architectural remains were to be arraigned in like manner, the list of defaulters would be a very long one. There is no class of illustrative drawing among which such extraordinary and perverse inaccuracies are to be found than among architectural drawings and engravings, which appear to become more wild and inaccurate the further back we go from the present time. The drawings of Villars de Honecourt form a notorious instance, in which a Gothic architect bent on building in the style of his day apparently found it absolutely impossible to draw buildings which he saw before his eyes, not in decay, but in a comparatively fresh stage of their existence, without putting in his own fancies, inextricably intermingled with vague representations of something like the actual detail. When the time came that Gothic buildings were sketched, as they occasionally were, by draughtsmen of the Renaissance school who had no eyes to see correctly the Mediæval detail, and when the drawings were subsequently translated into engraving by engravers who further misrepresented the drawing, which was itself a misrepresentation, the results were, in a different way, just as curious and as wide of the mark. In modern times the scientific spirit which has exercised such an influence over almost every department of human life and human work, has had its effect on architectural sketching and drawing as well as upon more important studies, and of late years architectural students have been over and over again exhorted to measure in addition to sketching, and to make measured sketches their chief work in carrying away records of existing buildings; and the feeling in favour of greater accuracy and conscientiousness in these matters has so far spread that probably we shall never again have to complain of such inaccuracies and absurdities in architectural illustration as those which, at one time, were contentedly accepted without question or criticism.

These conscientious efforts to secure accuracy suggest, however, one or two lessons for us in regard to the limits which are placed to the measuring system in illustrating architecture, and the snares into which it may lead the practitioner. One of these is the desire on the part of the draughtsman to find a geometrical system in the building which he measures. The very act of illustration by means of measurement seems to lead the mind in the direction of looking at everything from a geometrical point of view. One or two coincidences of measurement suggest a special theory of proportion, and that once suggested to the mind it is wonderful what a tendency there will be in the dimensions subsequently taken to accommodate themselves to the supposed theory. Fractions of inches, or even of feet, which do not fall in properly, will be dismissed as trivial, or as due to settlement, or some other cause of disturbance; and with these little helps and accommodations a very consistent and beautiful key to the law of proportion of the structure, and the theory of its builders, may be made out, published, and adopted by as many readers as are predisposed to take similar views, or are from any other cause easy of conviction. The strength of mind to resist all these snares, and to confine the operations to recording with the greatest possible exactitude the actual dimensions existing, leaving it to be seen afterwards how far they will lend themselves to any consistent theory, is not given to all. In saying this, we are, of course, not controverting the idea that there has been a use of strict modules of proportion in architecture, or that some such cases have been rendered obvious by measurements of the structure; but we hold that the temptation to imagine and thereupon to discover their existence is very great, and has certainly not always been resisted.

One thing, however, every one may admit, viz., that where geometric proportions do exist in a building, measurement properly conducted may and will discover them, unless the building should have been so shaken in its lines by disturbance and settlement that its geometric proportions are practically destroyed. But there are qualities in most architectural monuments that are worth anything, as there are in most works of art of every kind, which measurement cannot thus accurately discover and represent. Even the more prosaic and practical details of ornament included under the head of mouldings present great difficulties in regard to their accurate reproduction, which can only be fairly met by the agency of special contrivances for recording them automatically. And still more is this the case when we come to that class of detail which represents the higher form of ornamental work, rising in scale from sculptured foliage or other ornament to the highest class of ornament, decorative sculpture. If this work is to be reproduced and illustrated, we know that something more than the mere measure rule and compass must come in here. We know that there must be the mind to appreciate the expression and style of the work, the sensitive eye to detect the little minutiæ of modelling which no measuring can hunt out or give expression to, and the trained and delicate hand to transfer the outline and the effect to paper. In dealing with this part of the work we are in the region of purely artistic production, and experience constrains us to admit that though science may be measurement, art is not measurement. Mr. Penrose could give us the mathematical expression of the curves of the Parthenon columns and entablature, and they could be drawn out again from their elements as thus expressed; but not the most accurate measurement (and none could have been more accurate than his) could have given us in measured dimensions the mathematical expression of the Theseus, nor could any hand reproduce it with the same precision with which the proportions of the building could be reproduced by measurement. Art, as we have observed, is not measurement; and if so, may not the converse question be added, "Is measurement art?" And how does the answer to that question affect some theories as to architectural and decorative art?

Architecture is believed by many people to be an art,—not, like engineering, a science alone; a creed of which, it is needless to say, we are adherents. It is also a belief held by some, though not so numerous a body, that architectural design, to be true and permanently satisfactory, must be based upon regular ratios of proportions in regard to height, length, and breadth, and in the proportions of details to the whole. The advocates of this view of architectural design (many of whom, it may be observed, are not practical architects) are severe against what they call the haphazard way of designing to which those, they say, are reduced who do not pin their faith to any theory of proportions. Such persons are only able to design by trying various effects and proportions in sketches, and finally accepting what seems best to the eye; whereas the man armed with a theory of proportion has his way marked out for him, and has only to decide the dimensions of one or two leading lines of his building, and the other proportions follow as a matter of course. Without saying at once whether this is or is not the best way of producing buildings that are satisfactory to the eye, it seems certain that this kind of design by calculation is not "artistic" design in the sense in which the words are generally used. As we have seen, the higher we rise in the scale of art, so far as the accessories of a building are concerned, the less possible is it to reduce these to measurable expressions, and to illustrate them by means of measurement. If this is the case in regard to the parts, are we then to take it that the case is just reversed when we come to the whole, and that the building itself is higher in the scale of art when its method of "design" is capable of expression in figures, and depends upon the exact observance of minutely measured proportions. There is no doubt that if we take any well-known and well-designed style or order in architecture, we find certain general proportions of parts which cannot be widely departed from without offending the eye and the judgment of every practised architect; just as in the human figure we find a certain normal proportion of parts which cannot be widely departed from without a similar unsatisfactory result. In both these cases, however, we believe it is impossible for any one to assert positively, or at least to prove his assertion, that the proportions which seem satisfactory to us in the building and in the figure acquire this satisfactory character from any source but that of the habit of eye, coupled with the knowledge which experience gives us as to the proportionate strength required in different portions of the human frame or of the built structure. We are accustomed to see the column, capital, architrave, and frieze of any one of the Greek orders exhibiting certain general proportions of scale, and to see any of the members of that order of architecture decidedly differing from the customary scale would annoy our taste; but this is probably only a matter of habitude of perception, unless in such a case as, for instance, making the columns much too thin for stability. In that case our knowledge of the strength of

materials would come in, and the result would seem unsatisfactory, whether we were used to such proportions or not, if the column were actually doing the work of a support, and not merely part of a superficial imitation of construction. And, therefore, no doubt, things being as they are, the man who had studied the general proportions of the orders would be more readily able to make a design satisfactory to our taste than he who had not. We should feel a slip from these recognised proportions just as disagreeably as we feel a slip in grammar when we hear it; yet the rules of grammar are not part of the inner and necessary nature of things, but the result of custom and general agreement as to the relations of words; and so with the architectural design. In like manner an artist would have more readiness and power in drawing figures of the highest type if he had arrived by study and observation at a clear opinion as to the best normal proportions of the figure, which merely means the proportion embodying the most typical form selected from the average of the best available specimens of humanity.

But in both these cases it is one thing to have a settled idea as to the best proportions of the order, or the Gothic bay, or the figure; another thing to make a necessity of carrying out these proportions according to minutely-graduated dimensions, the relations of which can be expressed in figures, and their existence thereby proved to the understanding, but which the eye has no power to take certain cognisance of. If a painter told us not only that the general proportions of the heads, bodies, and limbs of his figures were in accordance with the best canon of proportion obtained by observation and measurement, but that their features were also minutely regulated in the same way, and that only thus could the true human expression be attained and represented by the artist, we should anticipate the result in a set of faces, handsome perhaps, but rigid in feature and monotonous in expression, and we should be disposed to answer him with Bacon's saying, that a painter doubtless may make a more beautiful face than ever was in reality, but that he must do it "by a kind of inspiration, as a musician produces an air, and not by rule." And may not the same answer apply to architecture? If a man tells us that there is a special proportion in all the parts of his building, so that all, down to the smallest detail, follow a certain rule of ratios of proportion, and that this has been so conscientiously carried out that a difference of an inch in the entire width of the building would impair its harmony and consequently its beauty, and that proportions of mouldings have been carried down to a small fraction of an inch, it is certain that a mind not prejudiced in favour of any mathematical theory of proportion, but judging by the power of observation of a trained eye, would regard as useless pedantry a theory which dealt in proportions so minutely balanced that the eye could not estimate them, and the mind could only be made to understand their existence by a process of calculation and expression in figures,—a theory which told him that the relations of height to breadth were calculated by inches or by still more minute fractions of the module adopted, when his experience told him that these proportions might vary even as much as a foot, or a whole module, one way or another, without the spectator being able to say positively, from the evidence of the eye alone, whether the demands of the theory had been fulfilled or not. Bacon's remark about music, to which we referred just now, has, in fact, a more direct bearing by analogy on the subject than many people are aware of,—more direct than Bacon himself was aware of. For modern investigations have placed it almost beyond doubt that our musical scale itself is in the main arbitrary; that, with the exception of the fifth, which is settled by its occurrence in the harmonic series and by other considerations, the other intervals might have been almost anything else which the original and half-unconscious framers of the scale had chosen to make them; that the satisfaction of our ear with the scale as it exists is chiefly that of habit (to a great extent inherited); and, more significant still, that a large proportion of the intervals and combinations preponderant in music are theoretically wrong and incompatible with each other, and that intervals and harmonies which are represented by the same written signs ought theoretically to vary in two or three different ways according to their relation to the context, and that by a very delicate and trained ear their differences from what the notes theoretically ought to be are, in some cases, even quite perceptible. All this, or most of it, has been discovered since the greatest musical compositions (the architecture of sound) were put together, and the great composers mostly knew nothing about these facts, and cared less. They wrote from the sense of melodic feeling and expression, and from the gradually increasing sympathies and habitudes of the cultivated ear in regard to harmonic combination, and the mathematical part of the matter has been discovered since. The older composers were very much bound down to rules in another sense,—rules as to the progression and succession of harmonies,—and the great composer of each succeeding epoch has broken through and set aside some of these rules, showing that good effects could be produced apart from their observance, and thus approximating more and more continually to the conclusion which has even been deliberately expressed, that "whatever has a good effect is right."

The analogy between music and architecture has been so often (and not unreasonably) drawn that there is the less reason to apologise for the question whether there may not be a great deal in regard to even the superior forms of architectural design which may be judged in the same way as we judge about music. Looking at the matter in this way, we may be at least allowed to imagine that architectural beauty, like musical beauty, is evolved from a sense of beauty and harmony of contour and proportion in a trained mind, acting through the eye, without the necessity of mathematical rules of proportion to guide such an eye; that in architectural proportion, as in musical proportion, "whatever has a good effect is right," and that this "good effect" is evolved and appreciated by the feeling and the eye, and not by formulæ; and we might even venture to suggest that if the Greeks were really so much under the dominion of a mathematically expressed theory, as some people suppose, the monotony of expression, which is, perhaps, the one serious shortcoming of their exquisitely refined architecture, is actually due to this subordination to an arbitrary theory, just as the comparative monotony of expression of the older school of "contrapuntal" composers in music is due to their compliance with arbitrary rules, from which the composers of the romantic school, like the architects of the romantic school, emancipated themselves.

We may pursue the subject further in another number, by considering the proper influence of measurement and measurable proportion in architectural detail and ornamental design.

THE ART OF THE ARABS.*

Their secular art, the art of their palaces and their houses, is broader and more tolerant. We are all familiar with the effigies on their coins, the figures and animals engraved on their vases, and painted in their manuscripts. With the Arabs, however, their rigorism strangely fettered their artistic skill. It cannot be said that the Arabs have ever shown the power of carving or designing a plant; in their hands it possesses none of the realistic character we see in Classic art and its direct derivatives. This, of course, is the great feature of Arab art, which is merely conventional in its representations, using flat patterns as it does flat colouring varied only by simple lines. But their artists work with the utmost minuteness, and their repetition of geometric forms is positively bewildering in its methodical variety and refined beauty. As a detail it is beyond doubt that the Egyptian hieroglyphs suggested to the Arabs the use of inscriptions as a form of decoration. Their art, sober, delicate, and, at its birth, frail, was, we have evidence, far less geometric than it eventually became. Their architectural surfaces were bare, broken only by a few small windows, arcades, or some slight ornamentation placed without much geometric precision, but invariably expressive of a refined fancy. Later on they covered their surfaces more fully, and geometric symmetry is more studied. The decoration is a wealth of splendour, but merely the variation and repetition of the simplest geometric forms; the slightest change of line permits of an infinite variety of ornament, and what we admire, is after all chiefly the work of an indomitable patience.* Very different is the spirit to that in which some choice detail of foliage or some saint-protecting niche or canopy was sculptured by a contemporary artist in the Gothic cathedrals of the North.

By their conventional representation of the beauties of nature, it is difficult for us to understand how their artisans conceived its expression; it would seem, as has been suggested, as if their sentiment was analogous to that by means of which music is felt, and that their creations were the combinations of notes, of figures, and of lines; compositions, the basis, the support, and the source of which was geometry, forced on them for their decorative elements by the exigencies of their religion.

One element in the formation of their art must not be overlooked, the surroundings in the midst of which the Arabs lived. For the Arab, as for the early Jew, the only monument he knew was the tent, his only luxuries his tissues and arms. His habits were in no harmony with the richly-sculptured surfaces of the Greek and Roman art he abhorred, and remains of which he met in every direction. Forbidden to use for decorative purposes the representation of man and animals, there alone remained geometry, the creative element of all the principles on which the material order of the universe is based.† Their art, therefore, is essentially decorative and all superficial; in architecture Arab art shows itself essentially the art of a poor people; it builds rapidly and not too well, with fragile materials, largely using coloured tiles as easily made, effective in decoration, and costing less than sculpture; but it is to be noted that, wherever there existed important monuments built of solid materials, there the Arab conquerors built their mosques with equal strength. In India, in Egypt, their architecture is massive. In Persia, where the anterior civilisation had but a feeble architecture, the Arab architecture is equally fragile. In Spain and Africa the Moorish architecture is purely decorative, a fact which constitutes its inferiority, and the reason why it is impossible to form a judgment of its spirit by a mere acquaintance with its Moorish creations. The interest of Moorish Spain and Algiers, roused by poets and by travellers alike, the romance of the Alhambra, is still, as it was when the West was first made acquainted with the East, almost entirely the sole conception formed of Oriental art. All its creations, as has been urged, are seen through the glamour of the Alhambra. A familiarity with Arab art is alone to be gained by a study of its productions as they are to be seen scattered over the vast area which their armies conquered, stretching from India to the South of Europe. It is an art to be judged by other standards than those by which we criticise the art founded on the model of Greece. It is an art profoundly influenced by its surroundings, by the climate, by the spirit of the people, by the life they led.

Ebers has remarked that the Arabs in Egypt never used in their edifices any Pharaonic relic, a fact which, doubtless, may be attributed to some superstitious fear. He describes the old mosques as originally in no way houses of prayer, but formed of an open court-yard, surrounded by a portico supported on columns, those most decorated being invariably turned in the direction of Mecca, the city where rest, as is well-known, the remains of the Prophet. The minaret, so essential a feature of the Arab mosque, was not, it appears, in use at the outset, and it would be very difficult to exactly decide on its origin. Was it suggested by the obelisk? by the architectural piles which flank the doors of the Egyptian temples? by the towers or observatories of Assyria? by the strange Phœnician tumulary edifices? the legendary columns of Solomon's temple, which were Egypto-Phœnicia-hebraic? by the towers of the Christian churches or the donjons of our feudal castles? The first minarets appeared at Damascus in the eighth century.

The oldest mosque, that of Amr the first conqueror of Egypt (in Cairo) bears no trace of what we understand as arabesque ornamen-

* See p. 202, *ante*.

* M. Bourgoin's two works on Arab architecture cited before, will be found to afford the most valuable information relating to the elements of Arabic decoration. M. Bourgoin has dissected the apparently complicated mode of interlacing-Saracenic decoration, and has shown its simple formation to rest on purely geometric forms. To those studying the decorative arts, M. Bourgoin's works will be found to be of the utmost value.

† Viollet-le-Duc.

tation. Arab decoration was not, as we have seen, a sudden creation; such as we find it, it was elaborated from existing elements after the time that all imitation of living nature was proscribed from the temple.

It is a peculiar feature of Arab architecture that it will be found to copy everywhere, as has above been remarked, the monuments existing in the countries conquered by their armies. In Egypt, in Arabia even, the primitive architecture preserves a marked and borrowed style,—Persian, Assyrian, and Phœnician,—to such a pitch that a strange analogy will even be found between these edifices and certain Etruscan tombs; the generally differing styles of both being derived from a common source. Other constructions, again, such as fortified gates, have a marked Roman character, and singularly resemble the military European architecture of the Middle Ages; they possess the same strength and solidity, and doubtless were copied, some from the buildings erected in Syria by the Crusaders, others from the military architecture of the Byzantines. In other directions the Byzantine style is again traceable, notably in the bulbous cupolas.

When, at length, the Persians, become Mussulmans, adopted an architecture many features of which,—the broad ogivale arcades and the long slender bays,—were handed down from the Greco-Roman period, the Islamites adopted the new Persian style, which we soon see spreading throughout the whole Mussulman territory. As it is impossible not to perceive, there are often striking analogies between certain characters of the Arabo-Persian style and that of our Northern Ogival or Gothic.

The use of brilliant colours for decorative purposes, introduced in mosaic, in tiles, and bands of stones of various colours, is, as is well known, a leading element of Arab architecture,—an element introduced with the Renaissance into the architecture of Italy. At the outset the Arabs used the glass mosaics of the Byzantines, and imitated very closely in their tissues and carpets and rugs the Greek stuffs. Later on the Syrian and Persian faïences appeared to them more appropriate to their tastes and symbolic ideas, they adopted their use, and applied not a little of their style to the design in their stuffs. Thus it is not difficult to confuse the early Arab tissues with those of Byzantium, but later on the Mussulman decoration assumes a character of its own which is markedly distinct.

Islamite art preserved zealously almost all the great industries which existed in Persia and in the Egyptian territory when in the seventh century the Arabs took possession of the country; their tissues, their pottery and glass, their metal vases, their arms, ivories, inlaid and carved woods, leather work, and their delicate book illuminations. It is none the less certain, however, that little by little the exclusive rigorism of the sect of the Sunnites, became fatal to art. Even with those who tolerated the representation of the human figure, scruples seem often to manifest themselves; for on a large number of metal vases, of pieces of pottery, and even of illuminations, the face is not expressed: the oval of the head will be found left void. The representation of the animal caused far less embarrassment to the devotees, to judge by the works of art which have been handed down to our time.

Islamism, however, it cannot be denied, exercised on art a fatal influence by impelling it in one and that a special direction. Throughout the civilised world each people had till their time personified the various forces and phenomena of nature under the forms of divinities. To each of these was given the features and the costume of the race, surrounded by the animals and the plants of the country, introduced into legends typical of the national customs. Art under these influences became great, it became an important factor in the civilisation of the world, one of its most active agents. Islamism dealt a fatal blow by breaking this living tradition, by severing the bond which united God to man, to the animals and to the plants, and reducing all the decorative forms to a mystic and geometric abstraction. But even under these numbing influences the human intellect struggled violently to assert its power. In the works of these simple artists and artisans there is still evident the effort to express the force of nature. The beauty of the vegetation, the melancholy of the desert, the deep blue of the sky, the grandeur of the setting sun, the splendour of the peacock in his glory, we feel sure, stirred their artists as they traced their brilliant designs, as they painted with their bright colours their gorgeous tiles and illuminated manuscripts, and wove their brilliant stuffs, and circled with their red bands the delicate minarets of their mosques. Music in colours, such has Islamite art been defined, and its efforts show singularly the earnestness of its artists in the use of the simple means at their disposition, when we see how profoundly it stirs our sense of admiration. But, after all, in spite of the exquisite beauty and variety of Saracenic art, which authorities have found in many details to excel even that of Gothic in its best days, how far behind our vast, our powerful, and perfect artistic conceptions of ideal beauty does this art of the Arabs fall.

THE WATER SUPPLY OF ALEXANDRIA.

At a time when the word "Egypt" finds an anxious echo in so many English homes, it cannot fail to be of both general and special interest to give information as to any of those physical facts which, taken together, make up the outline of the situation in which our troops will so soon find themselves. And from this point of view it is of especial interest to watch those points when Eastern and Western civilisation come into contact, or it may be into collision. In no respect is there so broad a contrast between the principles (if we cannot say the habitual practice) of the East and of the West, as in what relates to sanitary measures. We may say that in the countries tenanted by the more intelligent Western nations it is agreed that there is such a thing as sanitary science, and that attempts are made, however inadequate and however spasmodic, to carry out these principles in practice. In the East, on the contrary, there would seem to be no admission of any such doctrine. Climate, race, religion, are all,—we do not wish to say anti-sanitary,—but fail to find a more expressive or appropriate word. The luxurious languor produced by the beams of an Egyptian or a Syrian sun is wholly incompatible with any sustained energy in the construction or the visitation of drains and sewers. Bathing, no doubt, is in Mahommedan countries, a luxury as well as a religious observance; but there is a great difference between the ablutions prescribed by Islam and the devotion shown by the Englishman to the morning "tub." While as to the most obvious precautions for preventing the distribution of germs of disease,—Bismillah, many a Moslem, not to add many a Jewish doctor, will be only too apt to regard them as somewhat profane, as a flying in the face of Providence, and as an infidel doubt of the truth that "what is written" (in the book of fate) "is written."

In Syria all this has borne a fruit which must go for much in any sane forecast of the future of that country. The supplies of water are so poisoned by the neglect of sewerage that fevers of more or less venomous nature are all but unavoidable. And there is ample evidence to show that the mere precaution of the use of condensed water makes a difference in the death-roll of European troops much more important than the result of a great battle or even of a series of battles.

Alexandria is for the most part supplied with water for domestic purposes by a canal. The old canal of Alexandria is often referred to in the Napoleon correspondence at the time of the seizure of Malta and of Egypt by the French in 1798. It was probably of date coeval with the foundation of the city. Mehemet Ali, when Pasha of Egypt, conceived the statesman-like idea of enlarging this ancient aqueduct into a true canal, fitted to discharge the three important functions of water supply, irrigation, and navigation. In 1842 this enlarged canal, called after the Pasha the Mahmoudieh Canal, was connected by a lock with the River Nile at Atféh; and in 1849 M. Linant de Bellefonds, a French engineer, erected at Atféh steam pumps and machinery for pumping water from the Nile into the canal. This, however, was intended only as a subsidiary source of supply, and, in point of fact, M. Linant de Bellefonds, in his "Mémoires sur les principaux Travaux publics en Égypte," which is the source of most of the information now accessible on the subject, complains that owing to the habit of feeding the boiler furnaces of the pumping machinery with old chopped straw, only about one-sixth of the calculated duty is performed by the engines.

The true feeder of the Mahmoudieh Canal is the Canal de Khatabé, which falls into the former also near Atféh, its course being nearly at right angles to that of the larger waterway, which is about parallel to the shore line of the Delta. But the Khatabé Canal is almost torrential in the movement of its waters, which have a fall of 24 ft. in their course. Owing to this, it brings down such a quantity of mud and silt as to render it essential frequently to clear the Mahmoudieh Canal from its unwelcome contributions. This, however, has been wholly neglected, and the Mahmoudieh Canal is now so choked as to be impassable for vessels, and to yield very little water for irrigation; while as to the supply of water for domestic use at Alexandria, it is necessary to keep the canal so full,—up to the very top of its banks,—as to endanger the latter, and to make it a very easy matter to cut off the supply of Alexandria.

The population of Alexandria (without, of course, making any allowance for our troops) is stated in the last returns that we have seen at 214,000 souls. Comparing the water-supply of Toulouse and Besançon with that of other and more generally known towns, M. Linant de Bellefonds arrived at the allowance of one cubic mètre of water per diem for ten souls. This is almost exactly 22 gallons per day per unit of of population Toulouse allows 80 litres, or 17·6 gallons, and Besançon 100 litres, or 22 gallons, the latter thus being taken as the guide in the case of Alexandria. At this rate, 21·400 metric tons of water per day, or nearly 9 cubic feet per second, is required for the population,—a supply which ought to be increased by at least 20 per cent. under present circumstances. Alexandria is one of the few habitable cities which does not receive from the sky in the course of the year a supply of rain-water adequate for the wants of its population, if properly caught and kept.

There can be little doubt that by the exercise of a little wise forethought the measures which are now demanded for the service of our own troops may be so carried out as to confer lasting benefit on the inhabitants of Alexandria. The clearing out of the Mahmoudieh Canal is an operation which is demanded, so far as we can rely upon the very competent authority of M. Linant de Bellefonds, for the security of the water-supply of the city. To do the least that can be done would be a poor economy. Engineering science indicates that the Canal should be restored to a condition in which it may fulfil its two originally designed duties of water supply, irrigation and navigation. The prolongation of the channel to link together the Rosetta and the Damietta branches of the Nile, which was designed by M. Linant de Bellefonds, would no doubt be an admirable measure for Egypt. It is not demanded for our own immediate need, as, although its economic value would be considerable, its military use is less important for a power that commands the sea. In 1798 the essential element of dominion over Egypt was wanting to Napoleon. Before he had been a twelvemonth in possession of the country, notwithstanding the most arbitrary and severe regulations (admirably as they are calculated from the military point of view alone), his clear-sighted genius had convinced him that the holding of Egypt was a matter of days for a military force cut off, as was his, from its base. The only word to this effect, however, that is to be found amid a cloud of regulations, embracing every conceivable detail, from the foundation of an "Institute of Egypt," to the order for the discontinuance of the *sous-pieds* to the soldiers' pantaloons, is in a despatch to the Directory, when, demanding a fresh supply of 6,000 men, with specified quantities of fusils, sabres, munitions, saddles, and other implements of all kinds, he quietly remarks,—"If you cannot find the means to make these things reach me, you had better make peace, as I shall be reduced in six months to 15,000 troops, which is not a number adequate for the occupation of the country." That he did not stick at trifles in order to spare his troops is remarkably illustrated by the despatches, in which he urges Kleber and Dessaix to "faire couper cinq ou six têtes par jour," in order to teach the natives how to behave (*se conduire*), and in which he requests the Sultan of Darfour to send him 2,000 black slaves "à mon compte."

In spite of the gigantic character of the military genius of Bonaparte, his expedition to Egypt must be put down as a costly blunder. But from the records of his incessant activity, and of the provisions of a genius which foresaw

everything,—except the battle of Aboukir Bay, and the subsequent landing of Sir Ralph Abercrombie,—there is very much for us to learn. The cynical bad faith displayed towards the Grand Master of Malta,—and, indeed, towards any person in authority whom Bonaparte found it advisable to address,—is as much without excuse as (it is to be hoped) it is without example. But of the eminent value of the labours of the engineer Bonaparte was to the full aware; and we hope that the able men now in command of our expedition will, in this respect, take a leaf out of the book of one who, despite the frightful defects in his character, was one of the greatest captains the world has ever seen.

The allowance of twenty-two gallons per head of population per diem for the discharge of the Canal at Alexandria requires a considerably larger quantity to enter the canal. It is a remarkable fact that no cross-section of this work is given in the atlas to the "Mémoires" of M. Linant de Bellefonds, nor have we been able to discover the dimensions in the Library of the Institution of Civil Engineers. Assuming the width at 40 ft., as the evaporation in Egypt is as much as 13 ft. per annum, we cannot put it at less than half an inch per diem at the present season. This gives a quantity of 8,800 cubic feet per mile, which is equal to 12,400 metric tons per diem, in addition to the figures above given.

In the event of such a restoration of the canal as is demanded by the wants of civilisation, it will become of primary importance to ascertain whether any attempt was made by M. Coste, the engineer of Mehemet Ali, to puddle the waterway. The enormous discrepancy pointed out by M. Linant de Bellefonds between the calculated and the actual duty of his pumping machinery, seems to us to point rather to defect of puddle than to the use of straw as fuel. But this is only a suggestion, made in the absence of more exact information.

CONTINENTAL GATHERINGS.

In these days, when so few matters practically are free from the keen attacks of criticism, art, which from all time has been a fair field for severe strictures, could scarcely be expected to escape. The shuttlecock is gaily kept flying backwards and forwards, from critic to critic, from school to school, a general standard, it may be remarked, being thrown to the winds, what is abused by one is lauded by another; The various systems of art-education in vogue, or advocated by different authorities, it can easily be understood, have not fared better; and it does, indeed, seem difficult to please, not every one, but even any one. Of the sister arts, perhaps, architecture may be said to have come in for the severest attacks from the modern critics. It is not alone its creations that are criticised, it is its modes of instruction that are found fault with. In France,—to judge at least by a Parisian contemporary, the esteemed *Gazette des Beaux Arts*,—it would appear that there are influential authorities who deem, from an observation of recent exhibitions, that far too much attention is being paid to drawing in architecture, a detail in the many other serious items embraced in the education of the young architect,—a necessity, it is true, as a means of expressing his ideas and conceptions, but dangerous when made to take too prominent a place in his studies. It is to the importance given to mere graphic skill, to the "get up" of the drawings, that is attributed the absence from the yearly exhibitions of the more prominent members of the profession. It is an old quarrel, not only in France, but with us. Even here, to award prizes to architectural drawings, which are merely the scheme of the real work to be carried out, is thought by some overstepping the mark.

It is not alone from across the Channel that complaints reach us from time to time concerning the condition of contemporary architectural studies. The "Backwardness of American Architecture" recently formed a striking leader in the pages of an excellent New York contemporary, the *Critic*:—"Although in painting, and, perhaps, in sculpture also," remarks the writer, "the United States are improving from year to year, it is astonishing how architecture drags behind. An enormous quantity of building goes on here. Wards spring into being in a few years. Burned cities rise again before the ruins have done smoking. But the edifices, although sometimes loaded with ornament and constructed of costly materials, are seldom the work of an architect in the true sense of the term as now used,—namely, a master of building; as one says, a master of fine art. They are the works of masters of mechanical and technical art as opposed to the fine arts. In New York it will be the merest chance if the next public building or costly edifice does not fall into the hands of men who are not able even to sensibly 'lift' modern European ideas into architecture." Our American contemporary very properly complains of the complacency with which the public regards its ugly buildings. A lavish expenditure on the part of the wealthy seems incapable of producing any satisfactory result; while the experiment tried by the Union League Club,—the wonders of which, it will be remembered, were fully described and illustrated not long since, in the pages of one of the Anglo-American magazines,—only showed how grievous may be the elementary mistakes in architecture made even by a body of men of taste. "It is evident," remarks our contemporary, "that in the building committees appointed there is seldom or never a majority competent to select the best architect and get from him work that is worth the money expended." It would appear also that in order to obtain work the architect has not unfrequently to stultify himself; under such conditions how is it possible for him to work well?

Pretentious communities require pretentious buildings, conditions under which it is difficult to expect results of a high character. Were a more modest and an honester course pursued, our contemporary urges, a marked improvement could not fail to assert itself. "Millionaires would not build palaces in six months, but would employ architects to do work quietly; hasty work would be discontinued. The main point is, that the demand should be a demand of taste. Architects cannot be independent,—cannot educate the public,—cannot wait till they are dead for recognition. They depend almost as directly on the public as the actor, and their audience is neither so numerous nor so ready to be pleased with what is set before it. Until the public shall reform,—until the press shall begin to call owners and architects to account for vulgar, stupid, and ridiculous work,—there is no hope for American architecture. At present it represents the mere brutal force of money more than anything else. It shows, also, restlessness, vagueness of purpose, smattering of foreign styles. No wonder that many people prefer the barren monotony of bricks and mortar to the ineffectual efforts of our unhappy architects. And along with a thorough or searching criticism, such as the press can give, must go, on the side of architects and owners, the most elaborate drawings and models of projected buildings. For, alas! the building once in a place is there practically for ever. Criticisms are forgotten, and people accustom their eyes to the ugly mass. Then associations give it dignity, and the city is saddled with a dull and pointless building, to which the citizens cling with a fervour worthy of a St. Peter's or an Alhambra."

A few days since a most agreeable and original entertainment was given in Paris by M. Bartholdi, the French sculptor, to a number of guests on the platform of the scaffolding,—to which the luncheon was hauled up by ropes and pulleys,—of his colossal figure of Liberty, the figure, it will be remembered, which is eventually to be erected in New York Bay to commemorate the alliance of France and America in the War of Independence. We have classic evidence that the Colossus of Rhodes measured about 105 ft. high; the colossal figure of San Carlo Borromeo on Lake Maggiore is only about 3 ft. higher. The American figure of Liberty is to be no less than 137 ft. in height from its feet to the extremity of the torch in its right hand. The work is now rapidly progressing, and the completion is promised for the end of next year. The portion which is set up reaches above the knees, over 38 ft. As may be imagined, in the execution of so gigantic a work the difficulties to be grappled with are not a few. In addition to the large number of models which have had to be made by the artist himself, a huge framework, a skeleton of the figure has had to be built up, this requiring, as may be imagined, a scaffold of no small dimensions. Over the framework is laid a thick layer of plaster, to which again is attached, in pieces, the model cut in wood across the grain, so as to enable the bronze plates,—of which the figure is to be built up,—to be hammered, while hot, to the requisite shape; the plates, 2½ millimètres, about 3-32 of an inch thick, being eventually riveted together. This method has been adopted in preference to casting the figure in bronze, from motives of economy. According to Pliny, the famous Mercury of Zenodorus,—a colossus some 110 ft. high,—and which gave its name, it may be mentioned, to the Colosseum of Rome, cost some forty millions of sesterces, hard on 160,000*l.* of our money. M. Bartholdi reckons that the expense of his figure will not exceed 28,000*l.* The proceeds of a most successful lottery have already covered any possible contingencies. The statue completed, its power of resistance to the wind having been taken fully into account, it will be set up on a pedestal about 165 ft. high, erected by the Americans. Some idea, therefore, may be formed of the feature the figure is likely to be in New York Bay. With the huge suspension Brooklyn Bridge spanning the North River on one side, and on the other the figure of Liberty on Bedloe Island off the Battery, New York Bay will be a sight to be seen by the lovers of the extraordinary.

It was one of the wishes dearest to the heart of Garibaldi to see the Roman Campagna reclaimed from its uselessness and danger to the health of the capital. The work promises slowly to progress. Within a short time the municipality of Rome have published the report of Dr. Giuseppe Pinto on the hygienic position of Rome and the surrounding *campagna*. "At the moment of proceeding to the great hydraulic work of draining the Roman *campagna*, and improving the hygienic condition of the capital, one of the first operations to be undertaken," writes the Doctor, "is to drain the valley of the classic Almo, on the Via Appia, at about 500 paces from the Porta San Sebastiano. Without this preliminary and useful work, it is scarcely possible to hope for the development of the neighbourhood of the Aventine. The sum set down in the budget, 65,000 lire (2,600*l.*), for draining the basin of the Almo is insufficient. The general hydraulic works and partial replanting once executed, then habitable centres can be established. It is the political aim of Rome, as the capital of Italy, says Dr. Pinto, that the malaria, the result of causes more accidental than natural, should disappear, and the environing country become inhabitable during all seasons of the year, in order that the commercial and industrial existence of Rome may no longer suffer, and that the vital movement of the nation towards the capital should in no way be compromised.

The Architects' and Engineers' Congress, to be held in Rome, in December next, has been announced in these pages, and, as has been stated, the new National Gallery of Modern Art will then be thrown open, if not indeed earlier. The King of Italy signed, not long since a decree, establishing the institution. It is to be situated,—of all appropriate places in the city of so many artistic memories,—in the Thermes of Diocletian, so familiar to all Romans as the cloister of Michelangelo, overshadowed by the picturesque cypresses which are almost the first feature the stranger remarks on arriving in Rome by its modern entrance, the somewhat prosaic but handsome railway-station, round which the new life of the Italian capital is now centreing. A sum of 100,000 lire (4,000*l.*) is to be devoted annually to the purchase of works of contemporary artists. In spite of the existence of our Chantrey fund with its equal sum, when are we in England to own a modern National Gallery such as the French possess in their Luxembourg, the Belgians in their new Palais des Beaux Arts, the Germans at Berlin, the New Pinakothek at Munich, and now the Italians in Rome?

On Thursday in last week was opened at Paris, in the Palais de l'Industrie, the seventh biennial exhibition of the Union Centrale des Beaux-Arts. The exhibition this year is, as we announced some time since, specially devoted to tissues, wood industries, books, and printing. As previously, there are two distinct sections,—the modern and the retrospective, this latter containing a most characteristic and valuable series of loaned objects. We hope, at a later date, to be able to speak at some length of this exhibition, which is of exceptional interest.

HYDE PARK CORNER IN PARLIAMENT.

Although the debate on this matter on Saturday last, initiated by Lord Elcho, terminated in the agreement of the Committee of Supply to the preliminary vote of 3,000*l.* for reconstructing the reservoir now in the Green Park on another site, we hope the matter is not yet to be regarded as settled, especially as the last speaker on the occasion, Mr. Warton, pointedly suggested the desirability of giving more consideration to the subject. Other schemes besides the official one may require the removal of the reservoir; though the objection made to that vote, that it was asked for without the slightest indication as to where and in what form the reservoir was to be re-erected, was a perfectly pertinent one. The whole action and spirit of the present First Commissioner of Works in this and other matters call for very decided interference. We have had a great deal of mischief done by predecessors in the office, but we have hardly had any one who seemed possessed by such determination to thrust his schemes upon the public on the strength of his own confidence in their excellence, and to chop and change things at his own pleasure.

It is a pity that the opposition raised in the House to the scheme in question, and the rival scheme proposed by Lord Elcho, presented very weak points which could not but afford scope for effective reply. Lord Elcho made the mistake of proposing far too much, and of unnecessarily moving the park screen, just as the First Commissioner unnecessarily removes the Wellington Arch,—the removal being in each case to a less effective position. Lord Elcho should have left all that alone, and confined himself to pointing out how the traffic could be inexpensively relieved by continuing Hamilton-place under the angle of Constitution-hill,—a scheme which, as has been pointed out by a correspondent in our own columns, is perfectly practicable. Lord Elcho's plan also showed this feature, and that is the only one in his plan which really bears on the main point in a practical sense. His road, however, is very poorly laid out, in no regular curve of any kind, and, therefore, even in regard to this part of the scheme, his plan did not show it to the best advantage. It is exceedingly unfortunate, too, for the Institute of Architects that they should have gone into opposition in a manner which left the First Commissioner so many points open for retorts, which we will not recapitulate here, being bound to maintain a certain *esprit de corps* in regard to the only representative body of British architects, but which we cannot say we think were unreasonable.

That, however, is beside the real question. We will merely notice the points in the First Commissioner's reply which require notice. He referred to the old scheme for making a tunnel under the Green Park from Hamilton-place to Constitution-hill as unsatisfactory. Tunnels are always unsatisfactory in such a case; we only refer to the point because a good many persons seem to have confounded this "tunnel" scheme with what we may call the "bridge" scheme which we have referred to, and they have imagined that this was only the tunnel idea revived. There are, if not "insuperable difficulties," at least insuperable objections to the tunnel scheme, but there are no insuperable difficulties, and hardly any difficulties at all, in making a road over which Constitution-hill can be carried on a bridge. The First Commissioner said it was a condition for relieving the traffic that the arch should be removed, because otherwise Grosvenor-place could not be widened, which was necessary in order to relieve the block. It has been pointed out already that Grosvenor-place could be widened for carriage traffic by the width of the footway adjoining the arch, which could easily be removed by providing another foot-passage leading up to Piccadilly by the east side of the arch; and certainly it is an easier and simpler thing to move a footway than to move the arch. But the widening of Grosvenor-place is not the essential point. It is astonishing that it should be necessary to point out that the block at Hyde Park Corner simply arises from the fact that for the space between Hamilton-place and the arch, all the north and south traffic is turned along the east and west route. That is the whole difficulty about which such mare's nests have been made: and the only thing wanted to relieve it is to get the north and south traffic off that piece of road, on which it has, by common sense, no right to be. That can be attained by continuing the road in its proper direction and running it under Constitution-hill, and the whole of the First Commissioner's big job of pulling down and re-building will not do one thing more to relieve the carriage-traffic than that simple plan would effect. But what about the unfortunate foot-passengers? The matter seems to have been looked at entirely from the point of view of people in carriages. If this Government scheme is carried out, all the thousands of foot-passengers who daily traverse Piccadilly east and west will be put to inconvenience, delay, and even danger, for perhaps generations to come. Let any one who has the capability of realising the effect of traffic on a plan look at the official plan, and say if this must not be its inevitable result. This seems to have escaped the notice of Lord Elcho, who might have made a far more effective point than any in his speech, if he had brought forward this serious and perfectly avoidable public inconvenience which is to be inflicted. Such matters seem to be beneath the consideration of the Office of Works, but the fact will be discovered and will become matter for serious and continued complaint if the scheme is carried out.

As to the injury to the effect of the arch in its proposed new position, the authorities seem to have no more clear idea about that than about the inconvenience that will be inflicted on foot passengers. What no one seems to realise is, that the arch will be shunted downhill, and that it will stand on the side of a slope with the ground higher on one side of it than on the other. These would be strong objections in any case; they are stronger when the removal is shown to be quite unnecessary. And no one who understands the feeling and *motif* of Classic architecture can possibly doubt that the arch standing opposite to and parallel to the Hyde Park screen makes a far better grouping,—the two objects flanking the main roadway into London, and mutually assisting each other's effect,—than if the two were entirely dissociated from one another. The First Commissioner quoted Mr. Street's authority to the effect that the arch would not be impaired in appearance by the proposed removal. If he had quoted Mr. Street in regard to some question about the treatment of one of our cathedrals, we could have understood it. That Mr. Street had any claims to be considered in any special degree an authority on Classic architecture, or on the laying out of sites, we certainly did not know. How much the judgment of those who are forcing on this matter on the general question of taste is worth, may be surmised from the fact that it was deliberately proposed to put the equestrian statue up again, after rebuilding the arch, and thus to make over again one of the silliest blunders that has ever been made in such matters. This intention, however, we are glad to hear, has been abandoned.

It is the assertion of the First Commissioner, upon which he has more than once laid stress, that his plan had "given general satisfaction" to the members of the House and to the press. In regard to the latter point, we have observed that the opinion of the daily journals is by no means unanimous: one important evening paper, for instance, more than once condemned and protested against the plan in the strongest terms; and we ourselves might, perhaps, be excused for thinking, without vanity, that the opinion of a journal especially devoted to architecture was of considerably more weight in regard to such a subject than that of a whole mass of general daily papers, the writers in which rarely even endeavour to understand matters of this kind. How much their opinion is worth on the present subject may be judged from the ridiculously inaccurate way in which the discussion was reported in some of them, in which various schemes were all mixed up and confounded together, while one paper spoke of the statue and the arch as being "no doubt only too well fitted for each other," quite unaware that the arch was the work of an eminent and cultivated architect, which had been nearly ruined in its effect by a bad and disproportionate statue never intended for it. The members of the House, whose "general satisfaction" is quoted, do not as a body know much more about such matters than the newspapers; and it is certainly significant that the only architect who is a member of the House, Mr. Peddie, expressed decided disapproval of the scheme; so that there are very important deductions to be made from the First Commissioner's claim to have given general satisfaction. We shall, at all events, endeavour to promote a wholesome dissatisfaction with his scheme, — with the greatest respect for himself personally, — as long as it seems of any use to do so.

We give elsewhere some notes of the discussions on the subject which have taken place in Parliament during the past few days.

FOREIGN PICTURES.

It seems but a few years ago that the London picture season was said to commence with the opening of the Royal Academy on the first Monday in May, and to end with the close of that august institution, in the last week in July. In those days, about thirty years ago, the exhibitions that lovers of pictures looked forward to were the Royal Academy at Somerset House (and a little later in Trafalgar-square), the Suffolk-street Gallery, as it was and still is called, the Old and New Water-Colour Societies, and the annual exhibition of the collected pictures purchased by the Art-Union of London. These exhibitions, with the addition of now and then some Bond-street or Egyptian Hall show of a characteristic work by a popular painter, composed the whole of the summer artistic attractions, until later in the year the British Institution in Pall-Mall opened its doors to the lovers of old art, when such collections were offered to their inspection as have ever since, to those who recall them, seemed the greatest artistic treats in their memory. It is true that most of the treasures many remember to have seen at the British Institution have since been shown to the younger generation at Burlington House, and not a few, owing to the liberality and patriotism of our collectors, are now hanging on the walls of our National Gallery.

At the exhibitions of modern art in the past we had to be content with the works of English artists alone. It was very rarely that the work of a foreign painter found a place in our London public galleries, and the mass of lovers of art in England were scarcely in any degree familiar with the work of modern foreign artists. Indeed, it may be said that this year's picture season has been the first to really familiarise the London public with foreign art, and in all conscience we must admit that there has been no lack of means of acquiring that kind of information. Not only has the past picture-season been characterised by the number of foreign pictures that have been exhibited, but by what may fairly be said to be the extraordinarily high prices that have been realised by works of art. In this respect, it appears that season after season adds something to the commercial value of certain pictures, and notwithstanding startling prices that we have for years heard of as given for the works of famous masters, we have almost reached a point when we cease to be surprised.

Certainly it may be said that the interest of the past picture season has chiefly centred in the great acquisitions made by the nation at the Hamilton Palace collection sale, of more than a dozen choice works by the great old masters. But markedly characteristic in our modern English art is the absence in any of our exhibitions of any strikingly representative picture, excepting always the fact that a great English portrait-painter has again shown to the world the ability of the English school to assert its traditional supremacy in this direction.

The collection of Mr. Watts's works at the Grosvenor Gallery has been another feature of the past picture season. We have more than once in these pages spoken in praise of the practice of gathering together the works of single painters, as being so advantageous in obtaining a correct appreciation of the merit of the artist, and we are happy to find the practice spreading. The collected works of the late Mr. Palmer afforded a great treat to the lovers of landscape art, and there have been several other collections of almost equal interest, not the least of which has been that of Miss North's floral studies at Kew, which she has generously presented to the nation and,—important point,—thrown open to the public on Sundays. We are happy to see that this charming artist has just departed for another floral tour in pursuit of her beloved art. For the first time in the history of painting the American artists have made a decided mark out of their own country, Mr. Sargent's Spanish pictures, of which we spoke in reviewing the Paris *Salon*, not only

being exceedingly fine, but promising much more from so young a painter; and there are several others of his countrymen whose works, if less fascinating, may obtain an enviable fame in this country.

It would occupy considerable space to merely enumerate the commercial exhibitions in Bond-street, the neighbourhood of St. James's-street, and the City, that have occupied the attention of art-loving people during the last picture season; and those who have a taste this way, and may have simply followed a fashion, have been able to become familiar with the works of foreign artists unknown to many of us until this year. To all greatly interested in pictures, the lovely landscapes of Corot and of Diaz have long been familiar. It is not alone the works of such men as Corot, Meissonier, Millet, Dupré, Frère, Gérôme, and a few other names that have long been before the world, but we have [this year seen, almost in perfection, the modern Italian school, the works of Signor Costa, Francesco Vinea, and a number of others, and we have been made more familiar with the French painter De Neuville. We have had opportunities of seeing not only the works of M. Munkacsy,—they have certainly been sufficiently advertised, — but the works of Knaus, of Vibert, of Bréton, of Vautier, and a host of other foreign artists, many of their pictures now reposing in our country, and others that have been seen on their way to adorn the palaces that are rapidly springing up in America.

It cannot be said that one is tired of the artistic pressure that has been brought to add to the weight of our amusements, but it is not difficult to foresee the possibility of too great an amount of increase in this direction. If we are to have more, or even as many, foreign pictures to amuse us and to excite our love of accumulation, it certainly seems to suggest the possibility that our English artists might perhaps with reason be disposed to complain. Whether they do so or not just now, must surely be owing either to a contentedness in their own prosperity or an amount of courage in disregarding rivalry that we hope is sufficiently well founded. That the American painters, at all events, do not rest quite so complacently in this respect, is shown by their seriously discussing just now the desirability of taxing at so much the square inch (!) all imported pictures, on which already very heavy duties are laid, but although in a country like England, advocating, as so many of us do, the fullest exercise of free trade, we are not likely to tax the introduction of foreign art, yet certainly English painters have to look at least to their laurels, if in their comfortable security they have no fear for their pockets.

FROM CHRISTCHURCH BAY.

Referring to our description of the coloured decoration of the Church of St. Nicholas, Guildford, which, as we are told, excited much interest in the locality, a correspondent writes to us from Bournemouth, to call attention to the fact that the stone capitals in the chancel of the noble priory church of Christchurch, Hants, are painted, and that of the very same colour and tint with those recently so treated at St. Nicholas. Nor is this a comparison of minor importance. Christchurch, among its other rare peculiarities, possesses that of unusual precision of date. Not having been utilised as a cathedral, the stalls and misereres in the chancel are now,—allowance being made for natural decay (which has been somewhat more rapid on the north side of the choir, which is exposed to the full heat of the sun, than on the south side, which is sheltered from the rays) just as it was when the monks went out. We do not at this moment remember another church in which that is so remarkably the case. On the other hand, the Late Perpendicular style of the choir, not in the roof and clearstory of the chancel alone, as at Christ Church, Oxford, but down to the very woodwork of the stalls, shows that this portion of the edifice cannot have been very long built before it ceased to be used as a monastic church. Thus it is not to be imagined that the bosses in the stone roof, or the capitals of the lofty columns, have been retouched since the Tudor times, and it is sure that in those times the colour must have been fresh. It is now in some places faded, in others more or less bright, especially the gold. But in the cavetto mouldings of the capitals, where the sun when at the hottest can strike with only an enfeebled power, the colour is in some cases so full as to be yet evidently what it was originally intended to be. And here, as before observed, the tint is identical with that employed by Messrs. Clayton & Bell.

An architectural rarity, which may justly claim the title of a bijou, looks down on Christchurch from the wooded summit of the northern side of the bay. This is Highcliffe, the seat of Louisa, Marchioness of Waterford, which was built by her ladyship's father, Lord Stuart de Rothsay. This building is in some sort a permanent museum; as exquisite specimens of French or Flemish work, bought by the noble builder abroad, and set in his own work, adorn the edifice. There is a projecting oriel window carved in Caen stone, which was bought in Rouen, numbered stone by stone, taken down, transported and re-erected at Highcliffe in a gable end designed expressly for the setting of it. Again, a sort of curtain connecting two re-entering angles of the building, has a parapet of pierced stone, formed by old letters that make an inscription, each letter standing out against the foliage that casts a green sheen through the apertures.

It is a satisfactory piece of intelligence, as regards the safety of this charming mansion, that one of the fierce storms of the present year broke through the bar which the confluent rivers Stour and Avon have formed parallel to the beach, behind which the water ran for some mile and a half or two miles from its proper mouth, as if with the express intention of undermining the cliff which bounds the Highcliffe estate. This danger, by no means an imaginary one, is now no longer menacing. But what an idea does it give of our river conservancy, or rather of the absence of any such provision, that this mischievous process should have gone on unchecked for so many years, with the further results of heading up the floods in the river valley, and preventing their natural outfall into the sea, to the great loss and damage of the farmers.

MELROSE ABBEY.

In connexion with its recent meeting at Carlisle, the Royal Archæological Institute visited Melrose Abbey, where Mr. Kerr read an interesting paper descriptive of the history and architecture of the buildings. In the course of his observations he said that the name indicated the original appearance of the locality, being composed of two Gaelic words, Mull and Rhoss, or Ross, signifying a bare promontory. The name was formerly spelled Mulross, now Melrose. The site was formed by the winding of the river Tweed through a narrow valley with rising grounds on either side. The locality had been distinguished from an early period, as it abounded in ancient remains of Roman buildings, ecclesiastical and baronial structures, cairns, and tumuli indicating the site of feuds and more formidable conflicts. In drawing attention to the abbey buildings he would remark that where they now stood was not the site of the original monastery of Melrose, which was situated at old Melrose, nearly two miles further east. The site was still pointed out as the Chapelknowe, but not a vestige of the buildings remained. Some carved red stones were dug up there a few years ago, indicating that the more recent buildings were in the Norman style. In the earliest period Bede stated that the churches were all of oak and thatched with reeds. The old abbey was supposed to have been founded towards the end of the sixth century, and afterwards dedicated to St. Cuthbert, its third abbot. It continued to be recognised as an abbey till 1136, when the present one was founded; afterwards it was referred to as St. Cuthbert's Chapel. The early ecclesiastics were Culdees, who existed up to the middle of the twelfth century, when they were merged into the Austin Canons, the order which they most resembled, and were afterwards only noticed occasionally until about the middle of the fourteenth century, when they finally disappeared. The present abbey was considered to have been a new institution, founded by David I. in 1136. None of the buildings of the period, if they did exist, could be identified, and it was probable that they were not so extensive as the subsequent erection. The Abbey of 1136 was ten years in building, and according to the "Chronicle of Mailros," was dedicated to St. Mary in 1146. It was colonised by monks of the Cistercian order from Riévalle, in the North Riding of Yorkshire, who were the first of the order introduced iuto Scotland, and continued as its head while it existed in this country. The "Chronicle of Mailros" was begun by the order establishment in 735, and continued down to 1270. The remains before them appears to have belonged to buildings erected after the demolition of David I.'s structure in 1322. Between this date and 1510 the present abbey had arisen which continued the Cistercian arrangement. There was one exception here to the general rule, by placing the garth or cloister court upon the north instead of the south side of the church. There were, however, examples of this deviation in England, as at Gloucester, Dore, St. David's, &c. It had been remarked that it was difficult to trace the progress of the styles of Scotland, on account of the sudden transitions that existed occasionally in the same building; but this was readily accounted for, from the frequent destruction of these during the inroads from England. The church presented unity of interest throughout, and as religious teaching and education was committed to its care, it became necessary even for the church's existence that her establishments should be placed in an efficient state as early as possible. The buildings were, therefore, restored according to the best examples, whether in style or arrangement. If the political situation of this country was such as to admit of architects, or master masons, being got from England, English features appeared; but if not, these were obtained from France. Thus they had in Melrose work of English character up to 1385, when the abbey was partially destroyed by Richard II., and from this period until 1510 the work in some places showed indication of French feature. He described the extent of property, which was large, which attached to the abbey, and other matters. Along with the decay of the reputation of the monks, from their indulgence in luxury and the grosser propensities, the abbey suffered many reverses, amongst the most prominent being its destruction in 1322 by Edward II. In 1385 it was burned by Richard II., and in 1545 it was literally destroyed, with the best of its outlying buildings, by the Earl of Hertford. To secure a portion of the nave to be used as a parish church the plain buttress and sub-vaulting (which they saw) were introduced into other fittings in 1618, and continued in use till 1810. He pointed out various interesting architectural features of the ruins, and exhibited a drawing of a restoration of the grand east window. Around were the graves of several persons whose names appeared in history. Upon the south side is the grave of Alexander II., upon the north the graves of the Douglases,—"the dark Knight of Liddesdale, and the hero of Otterburne." In the small chapel to the south of the altar is the grave of Sir Ralf Evers, and nearest the wall that of Sir Bryan Latoun (sometimes said to be that of Michael Scott, the wizard) who were killed at the battle of Ancrum Moor in 1545. At the entrance to the cloisters is the burial-place of the house of Yair, and opposite to it are the graves of the Kerrs of Keppilaw. The remainder of the paper was descriptive of particular features of the ruins.

Mr. Micklethwaite followed Mr. Kerr and spoke on the ecclesiastical and other aspects of the subject. Pointing to the rich and elaborate carvings of various parts of the ruins, he said it was an extraordinary place for the order of Cistercian canons, who in their churches aimed at being plain. He described the subsidiary buildings, and from the chancel pointed out the doorways in the transepts and aisles, and described the buildings into which they led. In the guide-books the positions of the nave and choir had been reversed. The choir was really on the other side of what was said to be it. In the exterior view of the east window there were two figures which were said to be those of David I. and his Queen Matilda. He did not think the figures were correctly described. His opinion was that the figures represented the crowning of the Virgin.

Glasgow Municipal Buildings. — The authors of the design bearing the motto "Gauntlet," one of the four specially selected in the final competition of ten, are Messrs. Thos. Worthington & J. G. Elgood, 110, King-street, Manchester.

SPECIAL LEGISLATION FOR THEATRES IN AUSTRIA.

The Commission appointed by the Governor of Lower Austria, and consisting of official representatives, architects, engineers, and scientists, which, in the first place, had to suggest measures of safety, upon the adoption of which by theatrical managers the granting of official licences to them was made dependent, have now also completed the second portion of their task. They have drawn up a set of regulations indicating the general conditions for the construction, arrangement, and working of theatres. Valuable material had been submitted to them in the form of opinions of engineering, architectural, and sanitary authorities, as well as numerous propositions for the prevention of fires in theatres, and foreign rules and regulations. On the basis of the resolutions passed by the Commission, the Governor of the province has published an order which deals with the question under seven different heads: 1, Conditions of construction; 2, the arrangement; 3, the working; 4, facilities for the construction of small theatres; 5, inspection of theatres; 6, theatre safety commissions (local and provincial); 7, general regulations. Under sections 1 to 6, it is ordered that new theatres are to be isolated, and erected at a distance of not less than 50 ft. from other buildings. The stage must be separated from the auditorium by a wall 2 ft. thick throughout, reaching from below the orchestra floor to above the roof, and having, besides the proscenium opening, only one means of communication. A vaulted corridor, at least 8 ft. 3 in. wide, must run round each tier of the auditorium, from which the public may leave by straight stairs leading to the open air. Every tier must have separate stairs on each side, and the stairs of the various tiers must not communicate with each other. Great stress is laid upon the point which deals with the impregnation (with uninflammable substances) of all objects on the stage,—furniture, decorations, &c. Sections 5 and 6 deal with the introduction of such rules as are necessary for continuously controlling the complete carrying out and permanent application of the conditions imposed. The control includes daily inspection by the building and fire-brigade authorities of the police; the appointment of local committees of supervision, who have to examine existing theatres periodically, and to report thereon; and, finally, the appointment of a provincial commission, acting with the provincial authorities, and exercising a continuous control by periodical examinations. In order to give full force to the above regulations, a special Bill is to be submitted to the Lower Austrian Landtag at its next session, which is intended to rectify existing defects.

THE AMSTERDAM EXHIBITION OF 1883.

The establishment of direct water communication with the North Sea has done much to restore to the Venice of the North the marine supremacy it enjoyed in the times of Dutch commercial supremacy. This return of Holland to a more important mercantile position than she had occupied of late years is being celebrated by an International Colonial Exhibition, which bids fair to take its place amongst the most comprehensive and interesting of those displays as yet witnessed.

The fact that the official journal has already made its first appearance indicates that the exhibition is intended to be something more than a mere show, and that it will to a certain extent partake of the nature of the special exhibitions and congresses which have done so much towards the development of industrial art in England and upon the Continent. Important traffic facilities both by sea and land have been arranged for.

According to the official announcements already made, this exhibition is intended to follow in the wake of those of London, Paris, Vienna, Philadelphia, Sydney, and Melbourne, but special prominence will be given to colonial subjects. The following is the general plan of the undertaking.

1. The Colonial portion (which forms the basis of the exhibition), in which the different systems of colonisation and of colonial agriculture, as well as the manners and customs of trans-oceanic countries, will be shown. Their industrial progress will also be illustrated and an attempt will be made to delineate what still remains to be done in the way of commerce and industry. Colonial *flora* and *fauna* will also be represented.

2. The export trade will be dealt with in a very comprehensive manner. Under this head will be grouped illustrations of many industrial processes in connexion with the transformation of raw materials into finished products.

3. Works of art from the most ancient times will be gathered together with a view of constituting an instructive *ensemble*, showing the ideas which have been developed in the succession of nations under the influence of civilisation. In this manner the comparative study of the fine arts at different periods and amongst different nations will be materially facilitated.

4. Temporary exhibitions (which have of late years done so much in the cause of art and industry) will form important features of the Amsterdam scheme. They will have special reference to horticulture, agriculture, &c., and Holland will itself contribute in a large measure to the expected success of this branch of the exhibition.

5. With an intelligent appreciation of the special advantages the conjuncture affords for scientific and artistic congresses, prospective arrangements have been made for *réunions* and conferences on subjects affecting education, arts, sciences, hygiene, political economy, international jurisprudence, and in which men of distinction in various branches are expected to take part. Colonial economy (as regarding the relations of colonies with the mother country) will form a prominent feature of discussion.

Nine galleries of the principal building are already built, and special attention is now being given to the portion of the exhibition in which the greater part of the machinery will be placed. The support of the various nations of the world which have been invited to take part in the display promises to be on a scale fully commensurate with the activity and intelligent energy shown by the administrative council.

PALACE OF COUNT DON PEDRO ANSÚREZ AT VALLADOLID.

Valladolid is commonly called the City of Don Pedro Ansúrez, and from this circumstance some are led to infer that this nobleman was the founder of the city. Authentic accounts, however, do not bear out the correctness of this supposition, for the existence of Valladolid can be traced to times anterior to the reign of King Alfonso VI. But Count Ansúrez, who enjoyed the protection of the king for his attachment during the persecutions carried on by his brother, Don Sancho, received the city as a reward for his services, and improved and embellished it in such a manner that he acquired the reputation of being the founder of that splendid city. Don Pedro and his wife, Dona Elo, erected several magnificent edifices. Among these may be cited the cathedral, Nuestra Señora de la Antigua, San Nicolas, and the bridge over the Pisuerga, as well as the palace in which they resided, and part of which we illustrate in this week's *Builder*. The palace, which stands on a site formerly outside the ramparts of the city, has now been converted into the hospital bearing the name of Santa Maria de Esgueva, and forms one of the most important features of Valladolid. Count Ansúrez is buried in Valladolid Cathedral, and his tomb bears the following pathetic inscription:—

> "The lives of the departed
> Admonish the living;
> But such is the change of the times
> That the mere mention of the dead
> Is offensive to the living generation."

CHÂTEAU AT HYÈRES.

This château stands upon an eminence two miles from the town of Hyères, and commands a magnificent view of the Mediterranean. It consists of three reception and six bed rooms, with dressing and bath rooms.

It is built of local stone, with freestone dressings, from quarries near Toulon, and is fitted internally with pitch-pine.

It is surrounded on three sides by a broad verandah, and has every modern English appliance.

The builders are MM. Bosquet, from Marseilles, and the clerk of works is Mr. Gilling. The architects are Messrs. W. G. Habershon & Fawckner, 88, Bloomsbury-square, London.

THE COMPETITION FOR THE HOUSE OF THE GERMAN IMPERIAL PARLIAMENT.

HERR WALLOT'S DESIGN.

With the present number of the *Builder* we present our readers with the ground-plan and a perspective view of the design of Herr Paul Wallot, a Frankfort architect, who gained one of the two first prizes in the competition for the new Imperial House of Parliament in Berlin. The Parliamentary Commission charged to provide a house for the Imperial Legislature has already made a definitive choice of Herr Wallot's design, and has appointed the successful author as architect of the new edifice. Herr Wallot's plan, however, before being carried out, is to undergo some changes and modifications derived partly from some of the other successful designs to which the Committee have awarded prizes, and partly from others which they have subsequently purchased. In its main outlines, nevertheless, the future House of the German Imperial Parliament will be a reproduction of Herr Wallot's plan, the modifications desired not being of any considerable extent. Before proceeding to any special remarks upon the successful design, we may permit ourselves some general observations, on the result of the competition. We may premise that we published in the columns of the *Builder* at the time the competition was announced a complete translation of the programme, including the conditions of the contest, the dimensions of the site, and a full catalogue, with dimensions of the rooms required in the new building. One of the principal difficulties of the problem, it will be remembered, was the contracted site which had been fixed upon. One side of the edifice was to face the Königsplatz, which has become one of the most interesting spots in Berlin since the erection of the Column of Victory in its centre in celebration of the triumphs of the German arms in 1870 and 1871. In the new Parliament House it was one of the conditions that the chief entrance should not be on the Königs-platz side, but on one of the other three sides nearer the city. The site of the new House is about 200 yards to the north-west of the Brandenburg Gate, which terminates the celebrated avenue, Unter den Linden. One side of the Königsplatz is formed by the open border of the well-known park, called the Thiergarten. On another side is Kroll's Theatre, and opposite this is the site chosen for the new edifice. There is no doubt it is one of the finest and most suitable spots for the purpose which could have been chosen within the enlarged precincts of the German capital. The Königs-platz, we may parenthetically remark, is destined, at some future period, to have erected upon one side of it,—we believe that now occupied by Kroll's Theatre,—a new palace, as the principal town residence of the new line of German emperors, an addition which will make it vie with the Lustgarten as the finest square in Berlin.

For the competition for designs for the new German Parliament House only the short space of three months was allowed. But the premiums were, for Germany, numerous and liberal,—two first premiums of 750*l.* each, three second premiums of 500*l.* each, and five third of 250*l.* each (see *Builder* of June 24th last),—the result being that an unprecedented number of competitors took part in the contest. The total number was 189, and the number of sheets of drawings sent in was upwards of 2,000. They were on view from the last week in June to late in July, and were exhibited at the Provisional Gallery of Fine Arts in the Cantian-platz, Berlin, where they were daily visited by architects and artists from all parts of Germany as well as by crowds of the general public of the capital. One result of the competition has been to call out a host of young architectural talent previously without distinction, the two first-prize takers being comparatively young men, and most of the others being by no means amongst the hitherto best known names amongst the architects of Germany. Speaking generally, the native critics are well satisfied with national progress evinced by this competition. Compared with the 1872 competition, the recent contest shows that German architects have, in the interim, without losing anything in the way of taste and learning, become more practical. In the former competition the prevailing failing as to the designs was that they sacrificed internal propriety and prac-

tical adaptation to the end in view to external effect. The idea then aimed at was, less to provide the Legislature with the most convenient house of business than to present to spectators a splendid monumental edifice. In the present year, while exterior effect has not been lost sight of, the internal arrangements, as evidenced in the ground-plans of Herren Wallot and Thiersch and many other competitors, are a vast improvement on the great majority of the designs delivered in the competition of ten years back.

Among the designs sent in this year there was but a very small percentage in the Gothic style, and not one of them gained a prize or any other distinction. The majority of the designs were in the strict Renaissance style, many of them enriched by motives derived from the German variety of that style. Few were in the more pronounced German-Renaissance style, nor were there many following strictly Hellenic forms. In nearly all the designs stone was the material chosen, the number preferring brick facings being very few.

In a Parliament House all other parts of the plan are, as a matter of real value, subordinate in importance to the hall in which the legislators sit to debate and make the laws. To give some external expression to this fact appears an æsthetic necessity, and this necessity should guide the architect in giving a monumental character to the edifice. The hall of session should, in fact, make itself in some form apparent in the external configuration of the building, and this has, in fact, been done in most cases by the competitors in the recent contest. The general solution has been found in surmounting the hall by a more or less lofty cupola. In some instances temple pediments, or pyramidal and terrace-like structures, have crowned the principal hall of session; in others we find towers and spires and other more fantastic shapes. By far the most common crown to the edifice, however, has been the cupola; both the cupola properly so called, and those forms consisting of a low pavilion or tower with tent-shaped or imperial roof, and with or without tholobate, &c. So afraid, however, were many of the competitors of going to excess in the monumental direction that their cupolas or other forms of crowning structure over the Hall of Session err in the opposite direction. They are too modest and too low, and do not stand out with sufficient prominence in comparison with the rest of the building. There are not wanting examples, however, of excess in the contrary direction.

The winner of the first premium, Herr Wallot, was the most successful of all the competitors in his cupola over the Session Hall, and his success with the jury was, in fact, largely due to the ingenuity he displayed in the solution of this portion of the problem. Herr Wallot proposes to build over the Hall of Session a lofty but open structure, so that the light can fall without hindrance through the sides upon the overhead lights of the Session Hall. By this means the House, which in Germany always sits in day time, obtains an excellent overhead light without the objectionable zenith light. Upon the open walls Herr Wallot constructs his dome-like curved roof,—a novelty which has been called a monumental baldachin or canopy. The way in which Herr Wallot has performed this part of his task is very original, and has won for him much praise with German critics.

The design of Herr Wallot was placed first amongst the completing plans by the almost unanimous vote of the jury. The critics who have seen the exhibition of the whole of the designs at Berlin have in general endorsed this verdict. This unanimity is due, amongst other excellences of Herr Wallot's work, to his exceedingly successful ground-plan. The problem that had to be solved was one of no ordinary difficulty, considering the shortness of the time allowed, the very limited dimensions of the site, the number, variety, and peculiar requirements of the interior apartments, and the numerous other stringent conditions imposed.

In spite of the conditions laid down in the programme, Herr Wallot has in some points ventured on solutions not contemplated by the Commission, but whatever he did in this way has been approved by the judges. Instead of one chief entrance for members, as demanded in the programme, Herr Wallot has provided three, each with appropriate vestibule. Those on the north and south sides are for the regular business, while the third and principal one, facing the König's-platz, and which was called for chiefly by æsthetic considerations, the author has provided for grand ceremonial occasions. In the centre, between these three openings, lies a grand staircase, covered in with glass overhead, and leading into the great Ceremonial or Festival Hall. On both sides of the staircase-hall, on the ground-floor, are the postal and telegraph offices. In the south-west and northern wings, on the ground-floor, are committee-rooms and audience apartments. The central grand staircase affords a convenient and appropriate means of communication between the chief rooms and halls used by the deputies on the principal floor and the apartments on the ground-floor.

All the subordinate entrances to the house are from the east or Sommer-strasse side. Here are two large portals, which, while serving as carriage entrances, leading into the eastern courts, also lead to the staircase conducting to the Bureau, or business offices of the Reichstag, and intended for the use of the general public having business to transact there. On the other side they lead to the staircase to be used by the Federal Council, and conducting to galleries or *loges* used by the Court and the diplomatic corps. There are two other entrances in the projecting centre of the building leading to the staircases conducting to the galleries set apart for the use of visitors, the reporters and representatives of the press, and the members of the local Parliaments of the various German states. The writing-rooms of the official shorthand-writers, which are accessible direct from the Hall of Session, lie on the ground-floor, between the two last-mentioned entrances. The other rooms on this floor are for the records of the House, or for use as offices of the Bureau, or as apartments for the servants resident on the premises.

As regards the upper floor of the house, where it is not absorbed by the lofty halls of the principal floor, extending up through both floors, the most interesting portions are those connected with the galleries and *loges* overlooking the Hall of Session. Those on the southern and half the eastern side are for members of the press, those on the other half of the eastern side, as well as on the northern side, are for the members of the Federal Council and Reichstag, and for the Imperial Court and the Corps Diplomatique, while those on the western side are for the general public or "strangers." The writing-rooms for the members of the press and the accessory apartments connected with the Court *loge* are on the eastern front of the building upon this upper floor.

The merits of Herr Wallot's ground-plan, as we have already intimated, are not surpassed by any other design produced at the competition. The whole *ensemble* is symmetrically grouped about two axes, a longer and a shorter one, and the entrances and staircases are arranged so that every part of the house is easy to find and readily accessible. While the distribution of the interior and the application of the space at command are very advantageous, the architect has contrived at the same time to obtain from the conformation of the interior powerful motives determining the configuration of the exterior. With all this he has never lost sight of the main purpose of the building, but has subordinated external effect as well as internal arrangement to the one principal object, that of providing a convenient house for the work of legislation. In the matter of lighting Herr Wallot has provided four open courts in the interior of the edifice, each of about 14 mètres wide by 21 mètres long; and by this means, as well as by the fact that the house stands detached on all sides, every part of it is well supplied with daylight, which is the more important, as the German Parliament never sits by night. It is only in the central division of the building, which is 48 mètres wide, that skylights are applied, and the only case of indirect lighting is that of the corridors in the eastern wing.

There have been several objections urged against Herr Wallot's ground-plan. One of the principal defects in the eyes of German critics is the position assigned to the Ceremonial Hall. According to the programme, this was required to be next to the Hall of Session, the largest of all the apartments in the building. It was to be capable of accommodating several hundreds of persons, and was intended for the use of large conferences and for certain occasional festivals and solemn state ceremonies. By the position assigned to it in Herr Wallot's plan it will necessarily be in constant use while the House is sitting as a thoroughfare to most of the other parts of the buildings. It, therefore, lacks the seclusion which was contemplated in the original scheme. Some of the competitors have, in fact, made this ceremonial hall the centre and pivot of their entire ground-plan. However, in Herr Wallot's plan the large Refreshment Hall could easily serve all the purposes required in the Ceremonial Hall. Another objection is to the position of the Reading-room for daily and periodical literature. It will be this room and the refreshment department that members will most frequent when they are not in their seats in the House; and, according to most critics, the large Reading and refreshment rooms should be close together instead of being, as in Herr Wallot's plan, at a considerable distance from each other on different sides of the building. It has been suggested that the reading room (No. 36) shall change places with the Committee-room (No. 32), whereby this objection would be obviated. Further objections have also been raised against the position of the reporters' gallery, which is at the back of the seats of the members of the Federal Council, and to the unsuitable arrangement of the corridors connected with the cloak-rooms. In a climate like that of Germany, where heavy fur overcoats are necessary in the open air in winter, the cloak-room, we may remark by the way, is a far more important consideration in all public buildings than in the comparatively mild climate of England. Other objections are to the out-of-the-way spot in which Herr Wallot has placed the principal sitting-hall of the Federal Council, and to the entrance staircase for the Federal Council and Court, which are thought not to be in a sufficiently prominent position. However, the limited dimensions of the site are the principal cause of all these minor defects; nor is it possible to see how, under the circumstances, they are to be avoided. Moreover, none of the points to which exception has been taken in Herr Wallot's ground-plan are very serious drawbacks, and weigh as nothing against the prevailing excellences of the design.

The Hall of Session is, for acoustic reasons, to be fitted with a straight wooden ceiling. Below this, and above the arches of the *loges* overlooking the house, there is a rather high frieze. This the architect appears to intend to have adorned with paintings, but in case the light entering from under the cupola is insufficient, windows may, if desired, take the place of such ornamentation here.

As regards the exterior of the building, the illustration enables the reader to form a better idea of it than any amount of mere verbal description. Suffice it to say that the architect has succeeded in giving it a monumental character, but one which is more likely to charm and please than to startle or overawe the spectator. The best German critics agree that, in point of originality of character, the design of Herr Wallot surpasses all its competitors. The effect of the exterior is heightened by the cupola or dome with which the architect has crowned the Hall of Session. There appears no doubt that the form, at once imposing and charming, of this crowning point of the new German Imperial Parliament House is destined to be intimately associated with all representations of the capital of the German Empire in future.

Next to the cupola, the most prominent features in the façade of the new House will be the corner towers. They are to be 16 mètres square, and will rise to a height of 33·5 mètres, or about 110 ft., above the street level, the height above the main cornice of the building being 12·5 mètres, or about 40 ft., These four towers are of a purely ornamental character, and do not rise from any internal necessity in the structure of the building itself. They form, nevertheless, an indispensable feature in the façade of Herr Wallot's Parliament House, of which they are a very effective adornment.

The gainers of the two first premiums, Herr Paul Wallot and Professor Thiersch, are both comparatively young men, the former being under forty and the latter hardly thirty years of age. Singularly enough, whatever success they have hitherto had as architects has been in the city of Frankfort-on-the-Main. Herr Wallot was born at Oppenheim, on the Rhine. He received his professional education at the

Berlin Bau-Akademie, and afterwards travelled for the sake of architectural study in Italy and England. Subsequently he settled as a private architect in Frankfort, and has there carried out a number of remarkable private edifices in the Zeil and other principal streets. In several recent competitions in Germany and Austria he has been a competitor, and his designs have invariably attracted notice. The other first prizeman, Professor Thiersch, is the nephew of the well-known Professor Thiersch, of Munich, who distinguished himself under King Louis I. of Bavaria. Herr Friedrich Thiersch, the successful competitor in the German Parliament House competition, studied at the Polytechnicum at Zurich, in Switzerland. He has erroneously been described as a pupil of the celebrated German architect, Herr Gottfried Semper. For several years after finishing his academical course, he worked practically in the office of Messrs. Mylias & Bluntschli, architects, of Frankfort. This firm has of late years competed in a series of prize competitions, and has been very frequently successful. In the preparation of these winning designs the young Herr Thiersch has always had a considerable share. In decorative work Herr Thiersch has more particularly distinguished himself, and the decorations of the new Frankfort Opera-house are chiefly due to him. For three years past Herr Thiersch has been a professor at the Munich Academy and School of Art, an appointment to which he was called on the recommendation of Professor Piloty.

On July the 16th Messrs. Wallot and Thiersch were entertained at a banquet by their colleagues and fellow-members of the Architects' Club and the Artists' Society, at Frankfort-on-the-Main. The festival was held in the grand saloon attached to the Zoological Gardens of the city, and was a great success. The two architects were congratulated on their success by Herr Lewald, the President of the Club, in the name of all the members. Each of them was at the same time presented with a gold laurel wreath and likewise with a diploma of honour. One of the speakers, Herr Viereck, expressed the universal sentiment of the Frankforters when, in winding up his speech, he remarked that, "It could not but be a proud feeling for this ancient Imperial city that it had been the lot of two architects trained within her walls to have supplied the best designs for the edifice which is destined to be the symbol of the re-established German Empire."

References to Plan.

1. Meeting Hall of the Federal Council.
2. Committee-room.
3, 4. Conference-rooms.
5. Cloak room.
6, 7. Private rooms of the Chancellor.
8, 9. Heads of Imperial Departments.
10, 11. Private rooms of the President.
12. Secretaries' rooms.
13. Chief clerks' room.
14. Writing-room for the public.
15. Writing or ante-room.
16. Clerk's office or room for collating.
17. Conference-room.
18. Lavatory for members of the Reichstag.
19. Refreshment-bar.
20. Room attached to the restaurant.
21. Librarian's room.
22. Assistant-librarian's room.
23. Attendant's room.
24. Cloak-room.
25. Door for the Ayes and door for the Noes.
26. Press stairs.
27. Stairs for the public.
28. Stairs to the reserved galleries.
29. Stairs for the Imperial Court.
30. Stairs for the Federal Council.
31. Writing-room, reading-room.
32. Committee-room.
33. Restaurant.
34. Meeting-room.
35. Writing-room.
36. Reading-room.
37. Clerk's office.
38. Registrar's office.
39. For the public.
40. Cashier's office.
41. Hall.
42. Lobby.
43. Library.

Building By-Laws at Brighton.—A builder named Monckton was charged at Brighton with two distinct breaches of the Building By-laws, for permitting a new house in Havelock-road to be inhabited without giving notice to the Town Council that it was ready for occupation; and for neglecting to provide proper ventilation to the drainage. He pleaded guilty; but, as no penalty could be imposed under the By-laws in the first case, the Deputy Stipendiary convicted in the second, and fined the defendant 2*l.* and costs.

MODERN ENGLISH POTTERY.

Some short time ago the Council of the Society of Arts arranged an exhibition of Modern English Pottery at their house in John-street, Adelphi. They had not sufficient room to accept all the works offered, but a very fine selection was made, and it is to be regretted that it was not more widely known and visited than was the case. We give in alphabetical order the names of the firms, seven in number, whose works formed the exhibition, and we are enabled to supplement this list with representations of a few of the works sent:—

Messrs. T. C. Brown-Westhead, Moore, & Co., Staffordshire.

Messrs. Henry Doulton & Co., Lambeth Potteries, and Potteries, Burslem, Staffordshire.

Mr. John Harrison, Linthorpe Pottery, Middlesbrough-on-Tees.

Messrs. Maw & Co., Benthall Works, Broseley, Shropshire.

Messrs. Mintons, Stoke-on-Trent.

Messrs. Josiah Wedgwood & Sons, Etruria, Stoke-upon-Trent; and

The Worcester Royal Porcelain Company, Worcester.

Messrs. Brown-Westhead, Moore, & Co. exhibited two large vases of a fine ivory colour, upon which were grouped raised birds and flowers in gold and silver, of a remarkably realistic character. One of these vases we show.

Messrs. Doulton had three distinct exhibits. On the centre table were various kinds of Doulton ware, and on one side of the entrance was a collection of Lambeth Faïence and Impasto ware. On the other side, a collection of earthenware, made at Burslem, Staffordshire. We have before now described some of their processes, and were amongst the first to give encouragement to their early efforts.

In the hall were two large vases of Doulton ware on pedestals, standing altogether about 6 ft. in height. These were ornamented with incised animal groups, designed by Miss H. B. Barlow. There was also a large bowl and an elevated stand, of which we give a view.

The collection of Doulton ware may be divided under the following three heads:—1. Salt-glazed decorated stoneware; 2. Salt-glazed *pâte sur pâte*; 3. Silicon ware. The whole of these wares are subject to one firing only, and are fired in the open kiln.

There is very great variety in the first class. The decoration consists entirely of original designs, and, except in the case of pairs, no two objects are exactly alike. It is of incised, modelled, and applied work, and the treatment is both natural and conventional. The forms are also very varied, and vases, jugs, cups, and candelabra in many shapes were represented. Besides these, there were some small square panels in colours, with figure subjects illustrating fables, modelled by Mr. George Tinworth. In the second class, there were some specimens of *pâte sur pâte*, in which the decoration is produced by coloured clays or slips laid on, and modelled with the brush. It is, in fact, painting on the solid body with an earthy pigment. The third class, or silicon ware, is a new manufacture of considerable hardness. In the earlier specimens, the silicon ground is elaborately covered with a bluish applied work of simple design, as in the sample we illustrate, but a much more delicate result has now been obtained by the application of a *pâte sur pâte* decoration.

There was a large display of specimens of Linthorpe ware in vases, tazzas, flower-pots, card-trays, fruit-dishes, &c. These are varied in shape and tone of colour, but all have a rich glaze. The ornamentation is but slightly marked on the surface, and is chiefly obtained by shades of colour. There were, however, some plaques with a rough ground, on which were raised flowers. Linthorpe is a suburb of Middlesbrough-on-Tees, and the pottery was started on his estate at that place by Mr. Harrison a few years ago, chiefly on the suggestion of Dr. Dresser. The material is a common red-brick clay, and the artistic effects are chiefly obtained from the originality of forms and from the parti-coloured glazes. Some of the shapes have been derived from Egyptian, Moorish, Indian, Chinese, Japanese, and other examples. Considerable picturesqueness may be perceived in the form of the handles of some of the objects. Low-toned reds, mottled olives, browns, and yellows, are found in great variety. Where so much depends upon colour, it is not easy to reproduce the effect in black and white; we give a view of one of the vases exhibited by Mr. Harrison.

Messrs. Maw & Co., of the Benthall Works, Broseley, Shropshire, exhibited a large collection of painted tiles and tile-panels, some of them decorated with landscapes, mosaics, and mouldings in coloured clays; also vases, jugs, and tazzas in various coloured glazes.

Messrs. Minton, of Stoke-upon-Trent, made a considerable show of a variety of different wares. There were several tea-sets, vases, plates, trays, plaques, &c. One of the porcelain tea-sets was of open work filled in with a pink glaze. Some of the vases were imitation Sèvres porcelain, and the plaques were richly ornamented with gold.

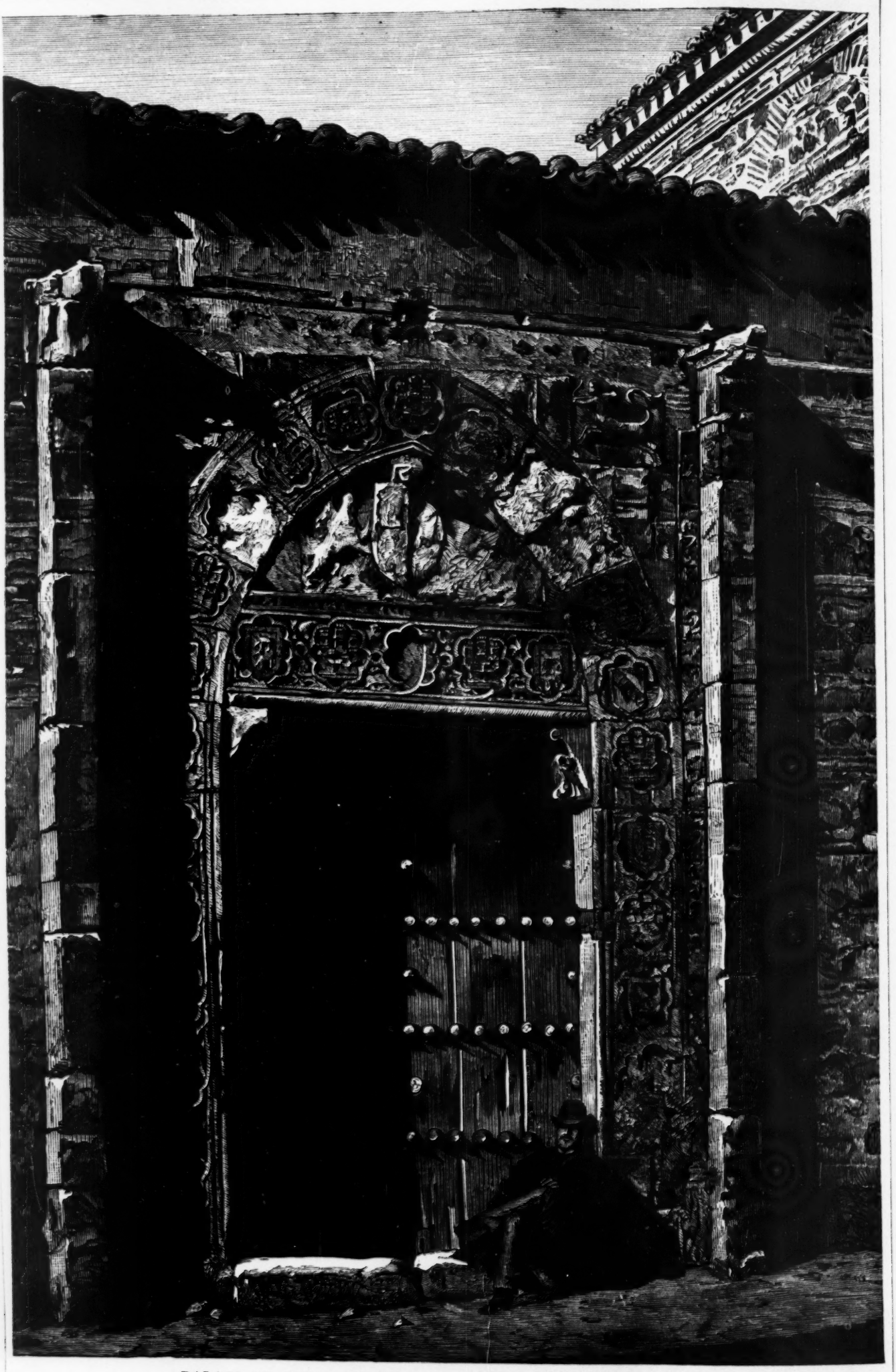
Messrs. Josiah Wedgwood & Sons, of Etruria, Stoke-upon-Trent, sent many objects representative of the historical wares of their firm, and also of those which have been introduced of late years. There were several reproductions of old vases which have made the name of Wedgwood famous. One of the works illustrated is Flaxman's vase. It represents Apollo and the Muses in black and white relief, but the vase is sometimes made in pale blue. With the pedestal, this, which stands 19¼ in., is the largest piece made by Messrs. Wedgwood. The illustration at the bottom of the page shows a vase of diced design in chocolate jasper, ornamented with small bas-reliefs. It is one of several used in the decoration of Lord Dysart's mansion at Buckminster. Some fine chimney-pieces were shown. In the decoration of Lord Dysart's mansion at Buckminster Park, Grantham, which is now being reconstructed by Mr. H. R. Ricardo, plaques and medallions are being largely used. Some of the solid jasper fronts for clocks and the medallions and plaques were exhibited.

The Worcester Royal Porcelain Company, the last we have to mention, exhibited an important collection of vases and othor decorative objects, besides services, showing the various classes of decoration now in use in the works at Worcester. On the site of these works the original establishment was founded in 1751, and some of the old buildings still remain. The first important alterations were carried out in 1840, and many additions have subsequently been made. The fame of the works is originally due to Dr. Wall, who produced a beautiful artificial porcelain as the result of his scientific researches. Dr. Wall died in 1776, and the remaining partners carried on the works until 1783, when the whole establishment was sold to Mr. Flight. Many changes have been made since then, and the present Joint Stock Company commenced in 1862, with Mr. R. W. Binns, a previous partner, as managing director. The earliest designs of the original Worcester Company were nearly all painted in blue. At present the manufacture of the works embrace the following varieties:—Fine porcelain, ivory porcelain, vitreous stone-ware or semi-porcelain, crown-ware, parian majolica, terra-cotta, &c. The raw materials used consist of china clay and china stone from Cornwall, felspar from Sweden, fireclay from Stourbridge and Broseley, marl from Broseley, flint from Dieppe and Gravesend, calcined bones, both home and American. The vases, jugs, &c., were mostly of ivory porcelain, a special body introduced by Mr. Binns twenty-six years ago, when he was in partnership with Mr. Kerr. The vase we illustrate is one of the finest works at present produced by the company. The ivory ground is covered with diaper work, and upon this the artist has made an arrangement of natural ferns, modelled and gilded with great delicacy.

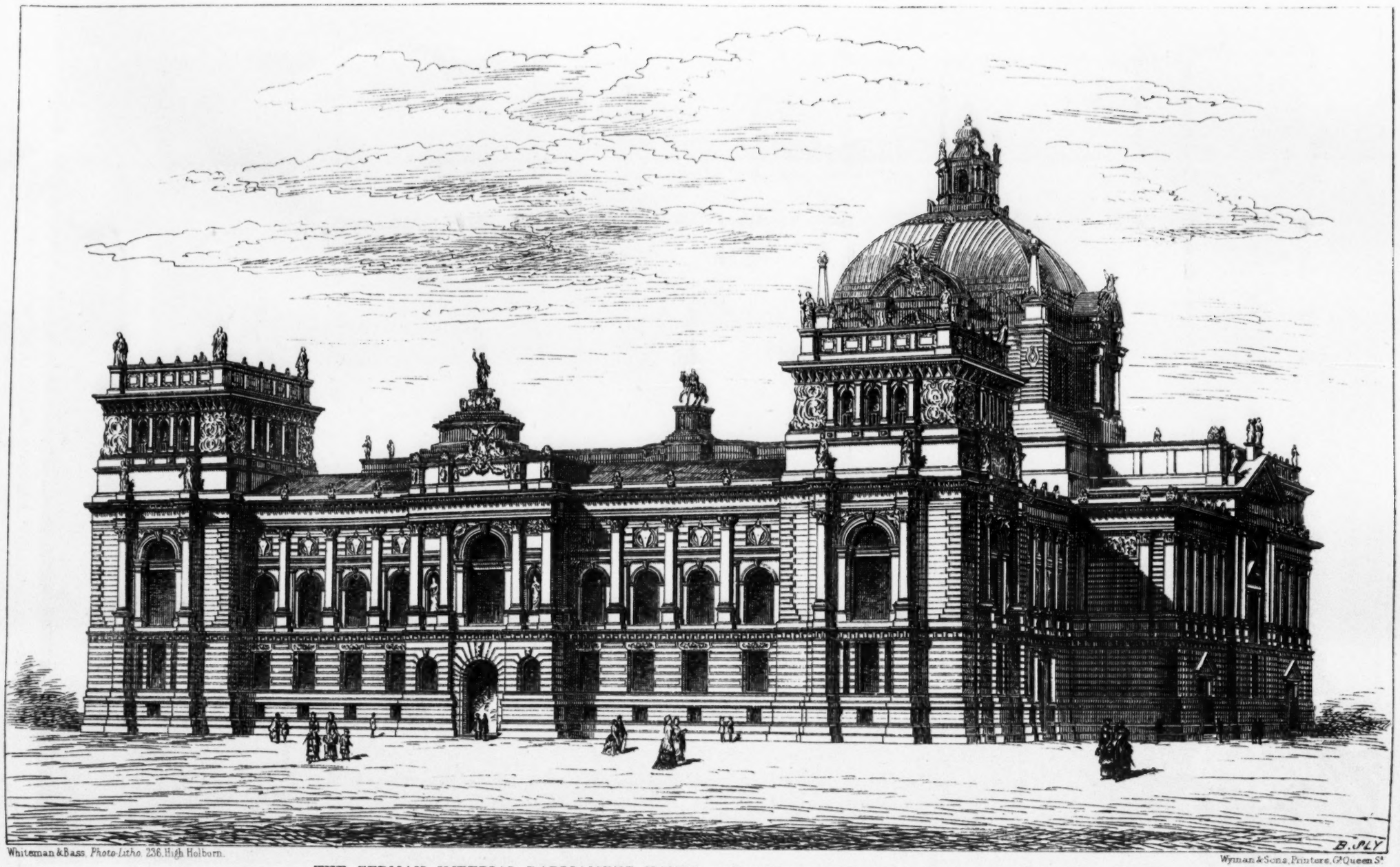
Quite early in the resuscitation of the Worcester Porcelain Works it was our privilege to assist the movement very considerably, and, strange to say, this was very fully and agreeably acknowledged at the time by the persons concerned.

When the Council of the Society of Arts again organise an exhibition of Modern English Pottery, they must do it on a larger scale, and take steps to render it more widely known.

Social.—The *employés* of Messrs. Bingley, Son, & Follit, slate merchants, Millbank, Westminster, held their annual beanfeast at the King's Arms, Weybridge, on Saturday last. Mr. Follit presided, and expressed the pleasure it gave him and his partners to be present on such occasions, and trusted that they might long continue to enjoy their annual holiday.



PALACE OF COUNT DON PEDRO ANSÚREZ, VALLADOLID, SPAIN.

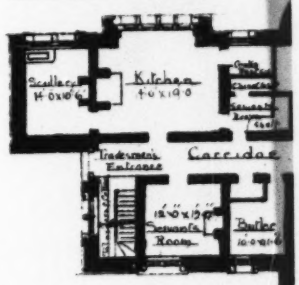


Whiteman & Bass, *Photo-Litho*, 236, High Holborn.

Wyman & Sons, Printers, 74 Queen St.

THE GERMAN IMPERIAL PARLIAMENT HOUSE.—THE SELECTED DESIGN, BY HERR PAUL WALLOT.

Chateau at Hyeres.
For J. Stanley Esqre.



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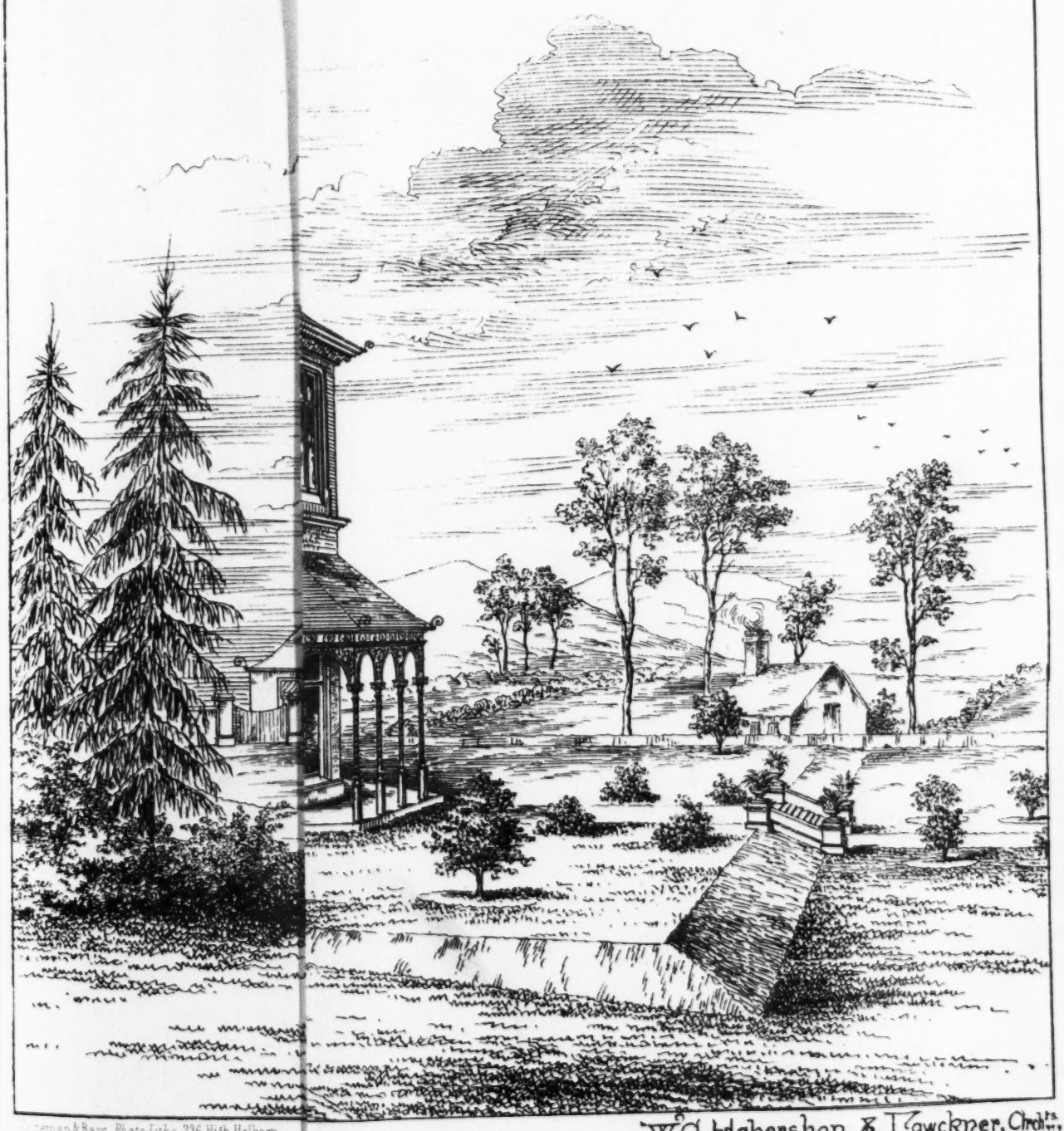
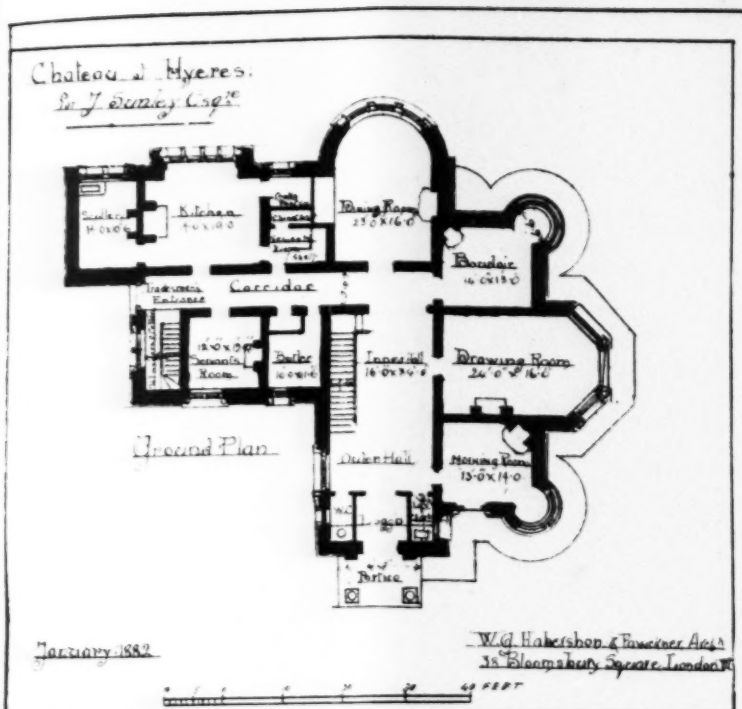


Hanhart & Bass Photo-Litho 236 High Holborn.

W.G. Habershon, & Pawckner, Archts.,
38. Bloomsbury Square, London, W.C.



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THE GERMAN IMPERIAL PARLIAMENT HOUSE.—THE SELECTED DESIGN, BY HERR PAUL WALLOT.

Whiteman & Bass Photo-Litho 236 High Holborn.

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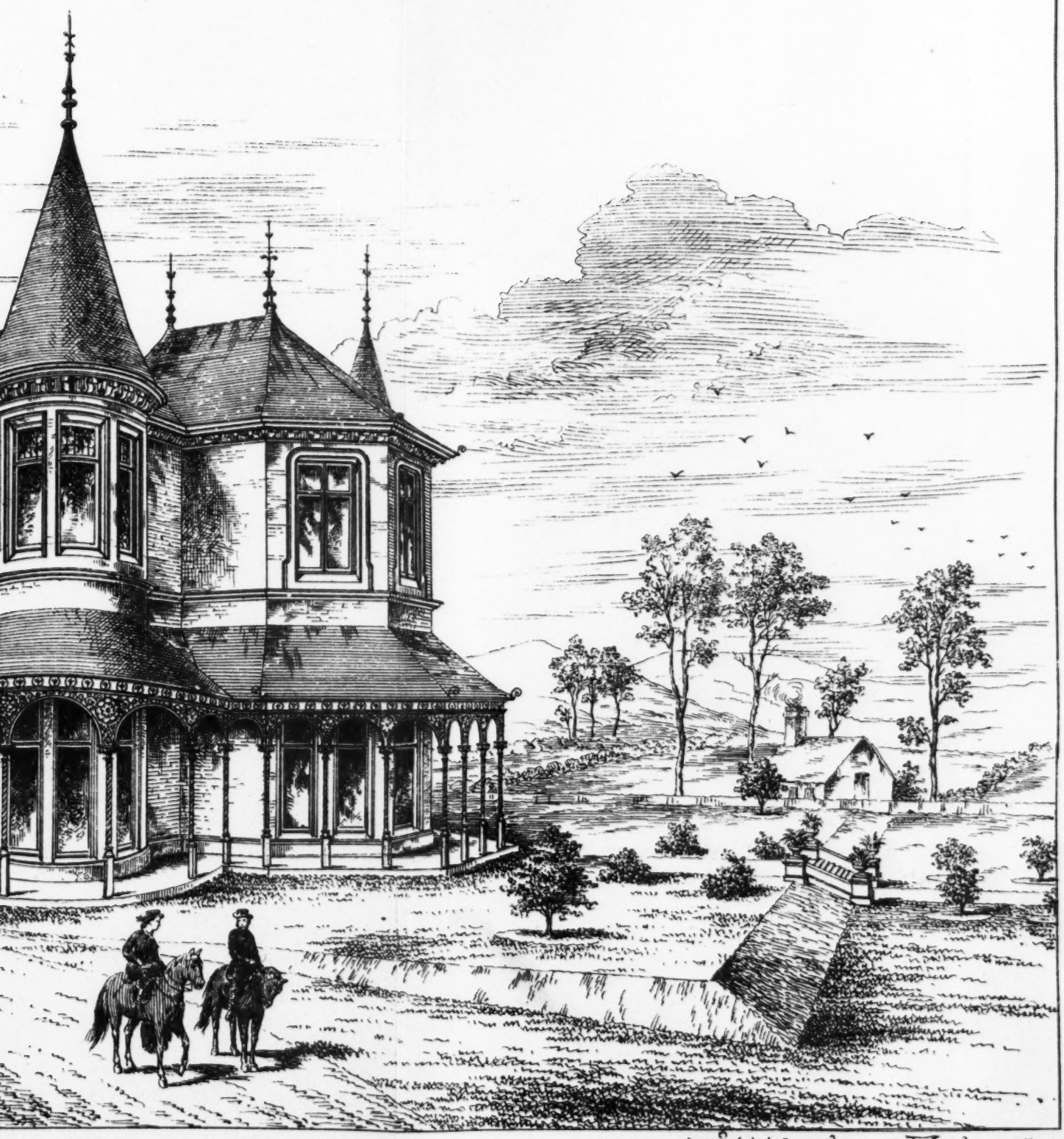

W. G. Habershon, & Fawckner, Chd.rs,
38. Bloomsbury Square, London, W.C.

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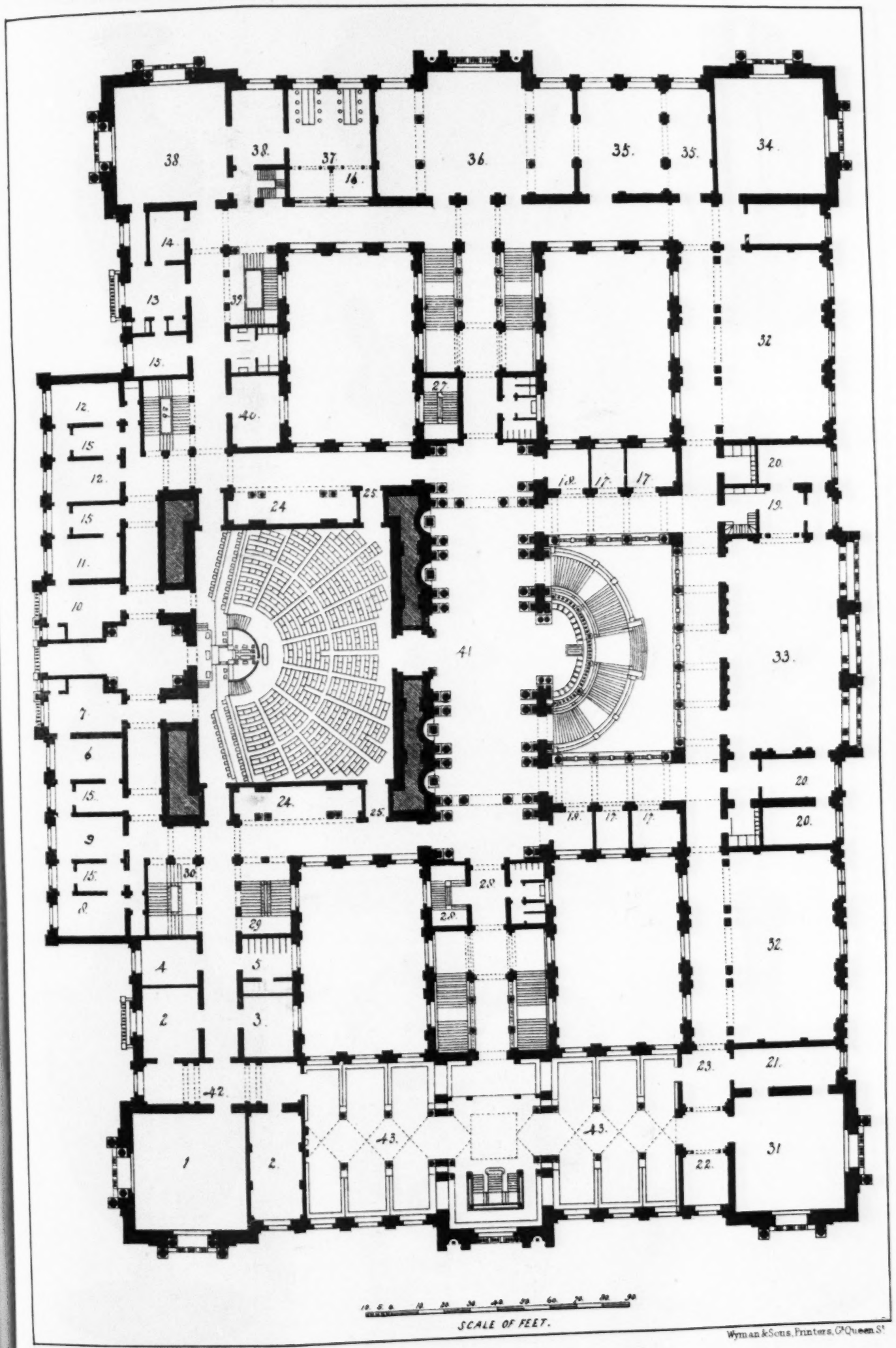

Wyman & Sons, Printers, 6 Queen St.

Whiteman & Bass, *Photo-Litho* 236 High Holborn.

THE GERMAN IMPERIAL PARLIAMENT HOUSE.—PLAN OF THE PRINCIPAL FLOOR: HERR WALLOT'S DESIGN.

DOULTON WARE.

DOULTON'S SILICON WARE.

LINTHORPE WARE.

WEDGWOOD VASE.
Pale Blue and White Jasper.

DOULTON WARE.

WEDGWOOD VASE.

WEDGWOOD VASE.

BROWN-WESTHEAD, MOORE, & CO.
LARGE EARTHENWARE VASE.

WORCESTER PORCELAIN.

MODERN ENGLISH POTTERY.

AN INQUIRY AS TO THE PRINCIPLES OF ART DECORATION.

Is the art of surface decoration referable to ascertainable laws of colour harmony, and, if so, from what source should the artist seek his inspiration? The universal agreement that certain combinations are beautiful, or the reverse, suggests the affirmative of the one part of the question, and the answer to the second part is obviously that the truth is to be found alone in the study of the book of nature.

The student, then, should first of all remark the effects of light as revealed in the rising or the setting sun, from whose glorious harmonies he will be able to derive the teachings which will guide him to the exposition of artistic truth in the practice of his work. This is to say, he will see all the force and beauty of gradation, from light to yellow, thence to orange, red, crimson, purple, violet, &c., and will be careful in avoiding every discordant note of colour in the treatment of those portions of his work which have reference to one another, as an architrave or a column to a flat surface, as a capital or base to a shaft, and as the parts of any of them to each other. Thus, green is a good colour for a wall, and blue for a ceiling. In Nature this arrangement is continually before us; and brown and green and greenish brown trunks are interspersed amidst the natural wall. So, given a green flat surface, the column or pilaster attached to, or in connexion with it, may well and harmoniously be painted another green, or a brown, not only because Nature so paints the trunks, amidst the green leaves, but because green and brown are colours in harmonious relation. Paint the pilaster in connexion with your green wall a bright vermilion, and a discordant result will be at once apparent.

This does not mean, however, that vermilion may not be employed in any case where green is the colour principally concerned, but that, if employed, it must be led up to through a series of harmonious gradations. Thus (confining ourselves to green) we will suppose for the purposes of illustration that our wall has received an agreeable tint of sage or neutral green,—a reposeful colour, and one always welcome to the jaded vision. But this is not enough; our art instincts demand that, at least, we have a band following the lines of the ceiling, and another at about the level of the eye, when sitting down. Now, what is the first colour to be superimposed on our neutral green ground? Clearly, another green a few shades darker as the groundwork of the bands. The bands, however, being drawn, we find that the wall surface below that, at the level of the eye, now bears a different relation to the whole; we, therefore, demand another tint; let it be painted a brownish green. This, in its turn, developes the necessity of another band of a deeper tone or colour following the line of the floor, which we will paint a dark bronze-green. Thus, in architectonic order, we have base, dado, surbase, surface, and cornice.

From plain surface to straight defined line, the instinct leads us thence to curves, and we essay what is termed ornament in our treatment of the bands and surfaces. First, where shall we begin? The artist intuitively selects the main surface of the wall between the surface and the ceiling, which he will decorate with a leaf and flower design *lighter* than the ground, and reaching in gradation almost to white in the corollæ of the flowers. He will paint the shadows of the leaves and flowers a *darker* green than the body of the wall, and the corolla he might even sparingly pick out in gold. For this treatment a natural wall of leaves and blossoms played on by the sunlight may be supposed to have furnished the hint. This surface decoration being accomplished, we have, so to speak, killed the plain green of the band below, which may be brought to life by first striking an almost white-green narrow line, followed by others in three or four gradations of tint, until a darker green than the band is reached. These will form the upper border. The lower border should begin with a line of darker green than the surface of the band, followed by others, until a dark bronze-green is reached. The surface of the band within the borders now demands decorative treatment, in which brown, purple, and blue may be so harmonised in leaf and flower, interspersed, as to suggest Nature's horizontal tints. The dado, on its brownish-green ground, may be diapered in brown, green, and gold, and the dark bronze-green base relieved by lines of gold. All this lower portion leading up to the horizontal band above the dado may not inaptly typify the ground or natural floor studded with varied vegetation. There remain but the upper band at the ceiling, which should be done in alternate lines of gold and grey; and the ceiling, which may be painted a light blue, to complete the typical picture of a landscape on the walls of our apartment.

This, however, assumes nothing beyond the embodiment of the principle which is at the root of true decoration. There is no reason why, instead of a prevailing green colour, one of an opposite nature,—red, for instance,—should not be adopted so long as the same principles are observed in its treatment. To paint green leaves on a red ground, or to have painted red leaves on our green ground, would be a clear departure from them, and the result repulsive to the least cultivated observer, ignorant of any reason wherefore. A highly-cultivated taste is necessarily conversant with the principles of beauty which minister to it.

Although, admittedly, the adoption of any one prevailing colour is not absolutely wrong, provided it be subjected to harmonious treatment, it may be observed that some colours are not only repellant and unwelcome at first sight, but become positively harmful to the vision by their continuous presence. No quality or arrangement of colour can be truly beautiful on which the eye does not delight to feast or dreamily repose. That which hurts the eye cannot be admitted largely into the domain of art. Thus, as we cannot look at the mid-day sun, or even on a field of poppies, without pain, or on mounds of scoriæ and plains of upturned peat without weariness; and, on the other hand, as the eye revels or reposes amidst the greens, and browns, and violets, and purples, which Nature lavishly sets forth to our view, so should we select those colours as key-tones in art, which her exemplar teaches us are beautiful.

This does not, of course, preclude the use of any one or another colour, except in the sense of degree as to depth. Thus, following the principles observed in the treatment of our typified landscape, we will now suppose red to be the prevailing tint or key colour to be worked upon. Our main surface would be scarcely deeper than salmon, from which would spring crimson reds, dark browns and chocolates for the bands, dados, and bases, and vermilion and black and gold ornamentation in the bands, and so on, following the method laid down for the other portions.

The objections to the use of deep or intense colours for broad surfaces, unless they are destined as backgrounds for sculpture or paintings, are,—firstly, their tiring or painful effect upon the eye; and, secondly, their great absorbent power as regards light. To mitigate the first, designs in lighter colours might be painted upon them, with the result, however, of practically destroying their effect as dark surfaces; or, secondly, designs in dark colours might be employed, but these alone would only intensify their light-absorbing power. We will then suppose that a dark red be given as the key-stone for decorative treatment in accordance with the principles already laid down. For the bands a still darker red, or a chocolate, would be used; for the dado, a rich brown, and bistre for the plinth. Next, what is to be done with the main surface between the dado and the ceiling, so as to qualify the light-absorbing power, without painting upon it a design which would practically bring it to a much lighter surface? Inferentially, it has been suggested that this would be effected by placing sculpture or hanging paintings; but as we are not concerned with a picture or sculpture gallery, we must look to our art to supply the need in question.

In conformity with the principle that the eye of taste demands the effect of lines to break up or relieve surface monotony, we are irresistibly driven to adopt them in the present case; the true artistic impulse being to suggest the semblance of windows or mirrors, which it will seek to do by symmetrically-arranged relieving lines of gold; these, by their strong reflecting power, compensating for the undue absorption of light by the dark surface. Gold would necessarily be used here considerably in the entire treatment of the work, not in masses, but in narrow lines, straight or curved, relieved by deep browns, chocolates, or blacks. The colour for our ceiling in this case would be a red tempered grey, the true tint being obtained by a graduated treatment of the upper band, which represents the cornice.

It goes without saying that these principles apply to the decoration of walls and ceilings under the most elaborate architectural forms and breakings-up of surfaces. Where plane surfaces of any great extent do not exist, the necessity for qualifying their absorbent tints is less exigent. As a rule, when broken-up surfaces are treated in polychrome, the salient ones should have more reflective tints than the receding, not necessarily lighter, but warmer. This is strictly in accordance with Nature's teaching, and must be followed in decorative art if it is to be worthy of the name.

All colour culminates in gold or its analogue, which is to say in the most highly reflecting expression of tint. The glittering whiteness which it displays when under a strong light is due to its power of giving back with interest the chromatic quality of every sort of light which is thrown upon it; or of the colour of whatever surface it is laid upon. Thus its employment in decorative art is of the highest importance, and its right or wrong use will go far to make or mar a work well considered in other respects.

The effect of gold lines upon a broad ground of chocolate, green, purple, blue, or maroon is as forcible and telling as upon one of dark red. The non-reflecting qualities of all these colours demands the juxtaposition of gold,—the cumulative colour *par excellence*,—to strike out, or develope, sympathetically, their latent power, enhancing the while its own inherent beauty. The effect of gold lines upon a broad surface of orange or vermilion, however, would not be such as to commend itself to the eye of taste.

That gold, the culmination of colour, centre of light, or source of colour, may be used with artistic effect upon surfaces whose tints are so far removed as almost to touch the borders of negation, may appear inimical to the doctrine that bright colours must be led up to by gradation, and that the juxtaposition of colours is only permissible when they are related by strain. But this is not so. It is in conformity with the principles laid down and so far illustrated that gold, or even silver, may, in the circle of colour harmony, unite with the nearest or remotest blue, as the stars reveal the beauty of night, and the sunlight that of the midday sky; but a golden sun set in a blood-red sky would be contrary to the conditions of subjective existence.

Nature, then, whether revealed in the sublime glory of the rainbow, or the painting of a flower, is the only true source from which the decorative artist can draw instruction and inspiration. But how little she has been studied hitherto is made abundantly evident by the many examples of what may be termed polychrome mistakes that have been perpetrated. Assuming it to be true that decorative art in colour may legitimately be applied to moulded architectural or sculptural forms, it is clearly the business of the artist to develope, not hide, their qualities; yet how frequently are vaulted roofs disfigured by meaningless reds and blues picked out in moulding and dog-tooth in the ribs of the groined arches? This is hideous and untrue, and as destructive of the architectural beauty which these features would derive from their own native colour and chiaroscuro as the war-paint upon the body of a Red Indian is to the natural beauty of his skin.

It follows, where form rules, colour must obey. We paint our canvas or our wall, but our sculptural or architectural feature is its own subject, and the material in which it is wrought or expressed can embody all its beauty and meaning. The vandalism that would paint sculptured leaves of any colour, most of all green, is at one with that which would paint white marble mouldings red. The house-painter is here the superior of both sculptor and architect.

Perhaps, with the exception of the purest white, and rarest and most costly variegated marbles, there is no building stone that is not susceptible to enhanced beauty by the help of external colour applied to its plain surface. But where the material is not ugly,—as is a dead brick wall, which we plaster, or colourless and bare, as is the plaster surface which we decorate,—but has positive chromatic beauties, as nearly all building stones have, these should be accepted as the key-tones to the harmony of all superimposed decoration.

True knowledge is indispensable to the artist who would essay to emphasise the sombre grandeur of the red sandstone, or the aërial majesty of the oolites and white limestones of which our cathedrals are severally the structural expressions. At the outset several questions came up for consideration. To what extent the

builders of the cathedrals employed colours? We have it in the evidence of the works themselves that it was but sparingly, and mainly confined to wall diaperings and spandrels. That this was often but experimental is sufficiently proved by the remains of its partial or sectional application, and that it was in any sense general is negatived by the absence of any trace of colour in many fine examples. It is clear the Gothic builders were not indifferent to what may be termed structural polychromy, as is shown by the intermixing of coloured marble and other column shafts with the piers, and the banding of vaulting in parti-coloured stones; and that they had the keenest appreciation of colour is shown by their windows, whose glazing tints have down to the present time remained unrivalled in quality and richness. Not to mention the painting of the wooden roofs, which belongs to a period at which the sun of Gothic art was, perhaps, about to set for ever, we may fairly conclude that colour decoration, as applied to the main structural features of Mediæval work, was not of the importance that would justify us in ranking it as a distinct branch of Gothic art. What reasons, then, withheld the Gothic builders from pursuing to its end an art which they essayed only to abandon? The long period comprising the entire era of Gothic art, from its rise to its decline, within which most cathedrals and many churches grew slowly to their final completion, may supply an answer. On the other hand, there are many cathedrals which were begun and finished as to their internal completeness, in one period of style which are conspicuous by the absence of any colour decoration whatever on their walls and mouldings. It would appear that though it was believed colour would add to the beauty of their work, they failed in its practical application, and renounced their faith in its possibilities. Were they wrong in their method and wrong also in their conclusion? An affirmative answer may safely be given to both. They erred, not in superimposing colour on surfaces whose tints were elaborated by the chemistry of Nature ages before the first stone received the mark of a chisel, but by their having failed to enlist and apply colour in its true and subservient relation to architecture and sculpture.

Paint or colour may legitimately be applied to wood as a preservative, or for art purposes where Nature has not given the wood a beauty of its own; also to imitations of stone on walls, and to moulded plaster work, and to modelled sculpturesque designs cast in a common mould, because these are not art, neither do they reach the dignity of handicraft, being imitations merely, the outcome of gradual casting. These things possess no inherent beauty, having no inherent truth, but so far as they exist they open fields of labour to the decorative artist. But the case is otherwise where the hand and eye of man have deftly wrought the moulded forms among which, with varied humour, the sun's rays delight to play, or where Nature's teachings and man's experiences and aspirations are recorded in sculptured capital and frieze. Here, colour externally applied can have no home. The sculptor's work is his own, and no part of it can belong to the painter.

If not, then, on the deftly-cut moulding, or sculptured capital and frieze, where is the artist to seek the field for his labour? Clearly in the surfaces which art has not already enriched; on the simple squared stones of the plain wall surfaces, between jamb, arch, rib, and column. Arcades, spandrels, and vaultings present a hundred canvasses already framed for the artist's work. Does the cold stone yield but a surface all too crude and harsh? Cover it with plaster hard and smooth as marble, worthy to receive the highest effort, or lay upon it the choicest mosaic that genius and material can command. What glorious opportunities are here offered by one art for the exercise of another. Unconfined to square, or circle, or any set geometrical form, the artist can hold revel within spaces, whose outlines are prodigal in stimulatives to invention.

We have spoken of key-tones: the term may be amplified into key-tone note, as supplied by the prevailing colour of the fabric, to which the artist must, so to speak, attune his work. The importance of this justifies the insistency of its observance at the risk of appearing to go over the same ground. To paint up your building, not paint it down, should be the end and aim. Are you intent on a pictorial work demanding some considerable depth of colour? Let it be placed near the eye, not in the spandrels between lofty arches or on the ceiling of a dome. Broad and deep colour is fatally destructive to architectural beauty in such positions. Recent work in most instances sufficiently proves this, wherein the architect and sculptor have been practically erased or blotted out by the decorative artist, and the cardinal principles of obedience to the key-tone note of the structure practically ignored.

The sombre grandeur of the red sandstone gives forth no uncertain note to the artist who listens to its sound. It says distinctly, "Profane not the stones with mocking, gaudy hues, but lightly trace in brown and green and gold that to which thy genius urges thee, in diaper and scroll, and likeness of living thing; and make the over-arching vault to simulate the silvern grey which mantles heaven's canopy, when night approaches and draws out the stars!"

The aërial dignity of the oolites and white limestones too, in tones as clear and beautiful as the light which their surfaces reflect, speak thus to the artist's soul:—"Nor here by vulgar hues disturb the chaste and glinting light which hovers all the space around, but, on each broad interspace of arch and columned wall, let thy invention trace in lines of faintest red, rich brown and gold, each charactered device; and all the springing vault, the ribs between, clothe with a robe of blue, light as when the meridian sun tempers with gold the crown of heaven's vault!"

A. B. C.

LANERCOST PRIORY.

Lanercost Priory was visited by the members of the Royal Archæological Institute the other day, in connexion with their meeting at Carlisle. Mr. C. J. Ferguson, of Carlisle, described the building, and in the course of his remarks called attention to the two figures in the upper part of the gable, stating that it was a question whether, standing as they did, they had been properly placed. The buildings consisted of a cruciform church with conventual buildings on the south side. The plan almost sufficed to tell its history. It was a priory of Austin canons similar to that of St. Mary at Carlisle. The church must have been at first a smaller building and without any aisle. Subsequently aisles were added and extensions made, except on the south side, there being on the south side the conventual buildings. The south part of the church was the earliest, and of the Transitional period. It seemed that the intention of the builders was at first to erect extensive buildings, and that was carried out by degrees. They found the choir and eastern portion of the church and the south and west side of the cloister were built later, and the church was gradually built westwards, increasing in richness, and culminating in the beautiful front they had now. The earliest portion, the Transitional work to which he had referred, was built of different stone from that of the cathedral at Carlisle, and here the Roman stones were palpably to be seen. Mr. Ferguson then conducted the party round the buildings by the north side, passing the eastern end and coming round to the site of the cloister, traces of which were pointed out. Going through a door under what he called the guest-room, in which they had just had luncheon, he led the company into the interior of the church. Only a small portion of the party could receive any benefit from their guide's explanations, in consequence of the confined nature of the ground, the desire of a large number to see the features of interest for themselves, and Mr. Ferguson's evident wish to "get on."

Before the company had well got into the interior, Mr. Micklethwaite, at Mr. Ferguson's request, "took up the parable." He said the key to the form of a church was almost always more easily got inside than outside. When they had once mastered how a church grew they could almost at once walk to the place where the earliest work was. This was a church of regular canons, like that at Carlisle; but it differed in one respect, which was characteristic of the order. Here they had a church with only one aisle. The explanation of this was that the regular canons always founded their churches where parish churches already existed. If they had not done that, this church would not have been at present in existence as it was. When the canons built it, it was built on the parish church lines, though much larger than the parish church. The Twelfth-century parish church was built in different forms. He would only speak of one of these forms. There was a church in the form of a cross, but without aisles. The canons built on the same model, or at least began to build so. They had a church without aisles and a transept without aisles; and when they had built that much, they would build a cloister and the buildings round it to live in. The next thing they built was the nave. By the time they got to rebuilding the nave,—it was about 100 years or more after the foundation,—the ideas of aisles had grown. By the end of the twelfth century or beginning of the thirteenth, the larger parish churches began to have aisles, and the canons thought they must have aisles too, and they accordingly made such additions. The canons had certain rights here, notably the right of procession, and there were doors for the procession to go through, and they found a door from the cloister as they found it in every abbey church. A door built up opposite the present organ would bring the canons into the church; that did not serve their turn, and therefore they had another door, traces of which they would see, not far from the other not going into the church, but into the canons' part.

The party proceeded to the chancel, now without the roof, and there Mr. Micklethwaite again addressed them. He said he had not much to say, except to call their attention to the way in which, having freed themselves from the difficulty in the position of the cloister, the canons went in for double aisles and symmetrical arrangement. He could not give a reason for the pillars being longer on one side than another. As they came into the chancel they came through a doorway rather Early English than Transitional. There, he believed, was one of the doorways between the parish church and the collegiate church. On the other side they saw the door by which the canons came in. He pointed to a Transitional door, which he thought probably entered a little sacristy, and close to it there was a patch in the wall which he thought was the way up to the old dormitory.

Mr. Tucker described the heraldry of the tombs. He said that the tomb of Sir Thomas Dacre on the south was interesting, because, like poor Lord Crawford's the other day, it was violated. This was about 100 years ago, and the body, to his knowledge, was never recovered. The other tomb on the north was that of Sir Humphrey Dacre and his wife.

Before leaving the subject of Lanercost Priory it may be mentioned that some of the visitors expressed a feeling, which would occur to many, when they said it was a burning shame that the effigy east of the chancel in the churchyard should be allowed to lie half-buried in the grass, to be kicked and disfigured by anybody. Local zeal might have done something for this.

THE HEIGHT OF HOUSES IN PARIS.

The Municipal Commission which has for some time past been occupied in examining various questions incidental to the proposed revision of the decrees of July 27, 1859, and June 18, 1872 (affecting the height of houses in Paris), has now concluded its deliberations. The following are among the principal features of the detailed scheme it has submitted to the Municipal Council of the city of Paris. These proposals, if approved, would form a basis for the new regulations.

The height of buildings should be determined with special reference to the width of the streets, according to the following scale:—

In streets less than 25 ft. 6 in. in width, the height should not exceed 39 ft. 6 in.

In streets ranging in width from 25 ft. 6 in. to 32 ft., the height should not exceed 49 ft.

In streets ranging in width from 32 ft. to 65 ft. 6 in., the height should not exceed 69 ft.

In public places, squares, boulevards, &c., from 65 ft. 6 in. upwards in width, the height of 65 ft. 6 in. is allowable only on condition that there should not be more than five stories (including the *entresol*) above the ground-floor, no part of the 65 ft. 6 in. being used for a sixth story.

Buildings, the entire façade of which lies back from the street, might be allowed a height respectively of 49 ft. or 59 ft., provided that the distance back from the line of houses added to the width of the street gives a width in the one case of not less than 25 ft. 6 in., and in the other of 35 ft. Buildings lying back from the line of houses in streets of 65 ft. 6 in. in width, might be allowed a height of 65 ft. 6 in.

The maximum height of buildings in courtyards and gardens would be 59 ft.

INSTITUTION OF MECHANICAL ENGINEERS.

On Tuesday last the twenty-seventh summer meeting of this body was opened in the civil court at the town-hall, Leeds, by the mayor of the borough, Alderman Tatham. There was a large attendance of the members, and the mayor welcomed them in an address, in which he showed how indispensable skill, industry, and activity were to secure that superiority in quality, quantity, and price, which would insure for British workmanship a full share of the world's trade, and at the same time improve the profits of the employer and the wages of the workmen. Those being the objects of the Institution, he hoped the present meeting would be a great success, and that the present, which was the third visit of the Institution to Leeds, would surpass any of those which had preceded it in stimulating mechanical ingenuity.

The President, Mr. Percy G. B. Westmacott, of the firm of Sir William Armstrong & Co., of Elswick, Northumberland, acknowledged the hearty welcome given to the institution by the chief magistrate. Having mentioned that there they met the descendants and survivors of those who had been among the most eminent in the engineering profession, he paid a tribute of respect to the memory of the late Mr. W. Menelaus and Mr. C. P. Stewart, after which he went on to speak of the importance of a nation or a community applying its inventive faculties to the moving of materials for useful purposes with the least amount of manual labour and waste. To extend and cheapen transport by land and by water was, in fact, to be in the van of all real work, of substantial progress, wealth, and civilisation. In the marvellous and gigantic structures of the East there was an enormous waste of manual power. They served no good or useful purpose for mankind, and stood only as monuments of man's pride and self-glorification. We might pride and plume ourselves upon the vast strides which science, art, and engineering had made in our own time, but posterity would assuredly lay its finger upon the great blot of waste, and stigmatise our age as the Black Age, which had spoiled by careless, unnecessary, and selfish emissions of smoke and noxious gases many a noble town and many a lovely spot on earth. The smoke nuisance was altogether inexcusable, and could not be too severely dealt with. The president went on to show that no really good invention was ever completely thrown aside, even though it might be superseded by some other invention. For instance, candles had not interfered with the use and progress of the oil lamp; gas had not snuffed out candles; and he did not agree with those who believed that electricity would totally supersede gas. As to the means of transport across land, it might, at first sight, seem singular that railways, lessening, as they had done, to an enormous extent the cost of land carriage in comparison with other traffic, had neither done away with horses and carts nor drained canals of their freights. The president's address went on to narrate how, on the Aire and Calder Navigation, which terminates at Goole, a boat containing thirty tons of coal is by a hydraulic hoist lifted bodily out of the water, and its contents are directly upset into the larger river craft; and, as this system is being further developed for boats of 150 tons, the president proceeded to ask, might there not be in this the precursor of the time when ocean-going steamers would without loss of time, on arriving in port, be lifted bodily out of the water and then scuttled of their contents right and left into warehouses, at a rate and with a saving of labour which would far exceed anything hitherto attempted? The extraordinary results from a concentration of work to the fullest extent upon a limited area had not always been properly recognised by dock companies. It had frequently happened, but more so abroad than on our own coast, that where a pressure due to an increase of trade had come upon a dock, it had been met by enlarging the dock area, and lengthening the quay space, at a great cost, instead of first making the best use of mechanical arrangements for quickening the discharge of vessels, and for the movement of goods to and from the quay.

Interesting papers by Mr. A. H. Meysey Thompson, on the History of Engineering in Leeds; and by Mr. Cochrane, of Stourbridge, on Blast Furnace Workings, were read, the latter evoking discussion. In the afternoon some of the works in the town were visited.

THE IRISH NATIONAL EXHIBITION, DUBLIN.

This exhibition, which has been promoted by the Irish Nationalist party, with the commendable view of furthering native industries and manufactures, was opened on Tuesday last, in a building erected for the purpose in the Rotunda gardens.

The exhibition building has been specially erected from the designs of Mr. Ashlin. The exhibition itself, however, is, we are sorry to hear, but a miniature of the exhibition held in Dublin in 1853. This is due, it is alleged, to political differences between those who were the first promoters of the scheme, which was put forward about a year ago. A guarantee fund of 20,000*l.* was at that time speedily promised, and all would have gone well but for the differences to which we have alluded,—differences which led to the withdrawal of a large number of the guarantors, and to the refusal, on the part of a large number of manufacturers, to take any part in the show. Ultimately, those of the original promoters who remained resolved to abandon the guarantee fund, and to raise the necessary funds required for the exhibition by forming a limited liability company. Notwithstanding these unhappy differences, the exhibition is spoken of as containing some admirable examples of Irish manufacturing enterprise and skilful handicraft.

The opening ceremony was performed by the Lord Mayor of Dublin, one of the directors of the Irish Exhibition Company, and to whom an address was presented by his co-directors. The address contained the following passages:—"We have not sought to exclude any interest. The work of all willing or likely honestly to labour for Ireland has been accepted. As Irishmen are received abroad, so we desire that those not Irish born, and who have cast in their lot with us, should here be received. In striving and working for our own country we are not actuated by narrow feelings towards others, especially towards neighbouring nations. We have striven to feel that a generous rivalry elevates, whilst narrow jealousies debase nations as they debase men. Much more depends upon ourselves than upon others in the elevation of this our own dear country. We trust that through Divine favour this effort of our shareholders, through your and our instrumentality, will forward the interest we all have at heart,—the interest of the true peace, enlightenment, and prosperity of Ireland."

The Lord Mayor of Dublin, in the course of his reply, said:—"I cannot forget nor forbear to mention the hopefulness and spirit that animated the trades and working-classes of Dublin and of all Ireland in supporting you and me in the task we had undertaken. The success is a tribute to their energy and self-reliance; and this fairy building is a lasting memorial to the genius and steady perseverance of Irish workmen. Give them fair play, and I will guarantee their fidelity and exertions. They have left behind them here a lasting proof of their power to carry out a work without a moment's interruption. I may only wish all the new-born industries of Ireland a like support. This Exhibition blends, as you say, all creeds and classes in the great work of national progress. May it be an omen of the extension of that union so indispensable to our success. We do not desire to exclude the productions or manufactures of other lands, but rather to encourage and develope our own. No one can blame us for this. . . . . The employers and workmen of Ireland have the future prosperity of the country in their hands. Here these two interests, well balanced and just towards each other, have achieved a triumph which, I hope, may be only the first of a long series for our country. I cannot reciprocate your concluding prayer for my own happiness, to which this day so largely contributes, without conveying in an especial manner my thanks to our excellent staff. The tribute to our architect, Mr. Ashlin, is all around us; Mr. Dudgeon's work is everywhere to be seen; Mr. Rooney and his colleagues deserve immense praise for their untiring exertions, promoted by an interest higher than any reward could create."

Sanitary Institute.—The fifth Autumnal Congress and Sanitary Exhibition of this Institute will be held at Newcastle-upon-Tyne, on September 26th to 30th, under the presidentship of Captain Douglas Galton, F.R.S.

THE O'CONNELL MONUMENT, DUBLIN.

On Tuesday last Dublin was *en fête*, for not only was the Irish National Exhibition of Industry opened, but the monument of "the Liberator," Daniel O'Connell, was unveiled. The monument stands at the head of Sackville-street, within view of the old Irish Parliament House. Its execution has extended over several years, partly owing to the magnitude of the work, and partly in consequence of the delay caused by the death of Mr. Foley, the sculptor who was commissioned to carry it out. On Mr. Foley's death, the completion of the work was entrusted to Mr. Brock, who has faithfully carried out the work in accordance with Foley's intentions. According to the Dublin *Freeman's Journal*, "the structure stands 40 ft. high, and consists of three distinct parts. Surmounting all is the figure of the Liberator, 12 ft. in height, representing him enveloped in his historic cloak. Next comes the cylindical drum, bearing fifty allegorical figures in high relief. Of these the principal is Erin, 8 ft. high, trampling her cast-off fetters under foot, while with one she grasps tne Act of Emancipation, and with the other points up to her Emancipator. The other figures are symbolic of the Church, the Professions, the Fine Arts, the Trades, and the Peasantry. Then the third part is the base itself, formed of two gradients." The four winged Victories which are to project from the corners are unfortunately absent, owing to the incompletion of the casting of one. They will form a most prominent feature of the completed monument. The Victory of Patriotism has seized a sword in her right hand and bears a shield in her left; the Victory of Fidelity holds a mariner's compass and caresses a dog,—both types of constancy; the Victory of Eloquence, with a look all fire and life, clasps a roll of documents; and the Victory of Courage is in the act of strangling a serpent as she grasps a bundle of reeds, typical of the doctrine,—union makes strength. The monument has cost 10,000*l.*

WATERPROOF CEMENT.

From the account published by Herr C. Puscher, in *Kunst und Gewerbe*, of the many experiments which he has made to render cement manufactures, cement and lime plaster proof against the effects of the weather, it appears that a cold solution of one part of green copperas in three parts of water is extremely effective. Cement manufactures are put into the solution for twenty-four hours, and then, coloured greenish black by the oxidulated iron hydrate which has been formed, dried in the air. The absorbed solution of copperas has been decomposed in the cement, and the combination of hydrated peroxide of iron formed is stated not only to render the cement denser and harder, but also, as it is not affected by the weather, to impart to it greater resistance. The weight of the cement is increased by ten per cent., without any change in form. It would be interesting to learn whether the favourable opinion of Herr Puscher is confirmed by other experimenters. Cement plaster is protected against the effects of the weather by repeated applications of the copperas solution. If, after the fourth application, the cement does not turn a dark greenish-black, it is a sign that the surface has become saturated with the iron combination. After drying, a coating is formed on the cement of an ochre-like colour, which cannot be washed off with water, and which will take water-colours. If cement plaster thus prepared is to be permanently painted with oil colours,—which, as is well known, peel off ordinary cement,—two applications of 5 per cent. soap water are sufficient to render it waterproof, and, after drying and rubbing with a cloth, as shiny as oil colour, so that one coating of the latter may be saved. In order to protect cement manufactures prepared with copperas against acids, alkalis, and the influence of the weather, a layer, penetrating a few centimètres, of a heated mixture of equal parts of ordinary paraffin and paraffin oil, or petroleum, is sufficient, which is obtained by immersing the heated cement articles in it for a few minutes. This cheap copperas solution may also be used for old or new lime plaster; old lime plaster must, however, first be freed from loose particles of colour by washing off. It is not advisable to mix the cement and sand at once with the copperas solution, as cement thus prepared cracks after drying.

"TO BE OR NOT TO BE."

PADDINGTON PARK.

At a moment when, though somewhat tardily (and if the effort is not made very vigorously the opportunity will be lost for ever), the question of creating Paddington Park is being again energetically mooted by some of the leading men and leading journals of the day, it more especially behoves this paper to advocate this important scheme. The *Builder*, as the late Mr. Street, R.A., remarked on the occasion of the presentation to its editor of the royal gold medal, has ever been one of the chief organs in advocating not merely art, pure and simple, as embellishing this vast city and charming the eye, but in striking deeper still, and exposing the crying evils of bad drainage, bad ventilation, bad buildings, especially as they affect the condition and happiness of the lower classes (and without these remedies mere beauty is but as a "whited sepulchre"), and should feel bound now to continue its efforts.

There will always be, alas! in a vast and ever-increasing city like this, overcrowded neighbourhoods, hotbeds of disease, where, if people keep alive, they still do so with a diminished vitality; and the only remedy possible,—the only possible antidote to the poison,—is pulling down the houses here and there, and forming open spaces, playgrounds, if I may call them so, in which adults and children can for the nonce get their lungs inflated with a purer air. From amongst the numerous letters on the subject which have appeared, I should like to quote one from the *Daily Telegraph*, bearing on the subject, and signed "Fieldfare":—

"As it seems to me impossible that a word can be said in favour of building upon the pleasant patch of isolated verdure on the northern hem of Paddington, I will leave the question you have so opportunely brought before the public to be solved, as I cannot but hope it will be, by wise counsellors. My purpose now is to edge in a plea for open spaces in general. Will you permit me, in a very few words, to submit a practical proposition? It is, that in all future extensions of the town a compulsory law shall provide for the inviolate reservation of a tithe of open ground for every hundred acres built upon. We have reached a certain danger, which can only be averted by some such plan as I suggest. Richmond, Twickenham, and other towns outside London, though threatened by its advancing strides, now begin to estimate the value of the old rustic green, happily preserved in their midst. So should it be, I contend, with every new suburb. Let the rapacity of builders be held in check by the Legislature. Compel every 'improving neighbourhood' to retain a village green proportioned to the acreage of streets and houses. There is no way but this out of the perils now besetting Londoners and their children."

But if such a harsh word as "rapacity" can be applied to builders, even their rapacity would in this case be short-sighted policy. The nearer to fresh air the more easily lettable, the more likely they are to secure lucrative tenants. The architect, the builder, in these modern days, plays an ever-increasingly important rôle in the onward progress of civilisation and humanity. If a sound mind in a sound body be the highest earthly desideratum, so a foul tenement lowers and debases a man's moral nature, whereas a clean and sweet abode has indubitably an influence in tending to make a man "live up to it." Overcrowding must always militate against a happy state of things; and that our forefathers were of this opinion is evident from the edicts issued in those cheery days of pretty rural England (1580), when one "payde 5s. for a lambe, 3d. for a pint of claret wine, and 4d. for a pecke of oysters," those days of May-scented turfy lanes, of quaint old rustic inns, when Bond-street and Conduit-street were so much country that my Lord Mayor Harper and aldermen hunted the hare, killed him, then to dinner at my Lord Mayor's banqueting-house (Stratford-place), then after dinner to hunt the fox, which, after much hallooing, they killed in St. Giles." Well, in those days the great queen, and her successor, James I. (1602), issued restrictive edicts for restraining the increase of buildings, and in 1657, during the Commonwealth, so necessary were open spaces thought to be that an Act was passed inflicting a penalty of 100*l.* upon every person who should erect any dwelling-house, out-house, or cottage without assigning four acres of ground to each respectively. Shade of Elizabeth! what would she say now?

In Paddington, there is crowded together a population (according to the census of 1881) of 107,000, and according to a later computation, of 130,000 souls,—more than the whole population of Brighton,—and of the 244 municipal cities of the boroughs of England and Wales, there are only sixteen having a larger population than Paddington. If their park be taken from them they have no open space nearer than a mile and a quarter or mile and a half. The well-known sanitary reformer, Dr. Hardwicke, pointed out the *absolute necessity* of securing the 80 acres that yet remain from the encroachment of bricks and mortar. At one time they could have been secured for less money than is now demanded by the Ecclesiastical Commissioners, into whose hands the Paddington Park estate, once belonging to the see of London, has now passed, and is administered by them under two trustees, who have it on a ninety-nine years' lease, with power to let, but not to sell. To obviate this difficulty, a Bill was brought before Parliament, but not passed; a similar Bill, with certain clauses eradicated, is to be again brought before Parliament. Towards the 200,000*l.* necessary for the purchase of the park, the Metropolitan Board will give 80,000*l.*; 30,000*l.* is already raised in subscriptions (and this, it is calculated, will soon reach the sum of 50,000*l.*). But if the deficit of 70,000*l.* be not made up, the scheme must fall to the ground. More shame to London if it do; for it is not Paddington alone this question concerns, but London at large, — the wealthy even, whose lot has been cast in pleasant places, who have the large areas of Hyde Park, St. James's Park, and squares innumerable. Little by little their palatial residences have swallowed up the few spots left to the moderate incomes of the poorer gentry. But they would do well not to stand by and see the poorer still deprived of even that he hath. They little dream how neglect of the considerations urged may forge an arm that will strike with unerring aim through the triple panoply of indifference, of luxury, and wealth. For the pestilence that flies by night, that stalks abroad in the noonday, is held in such slight check on the borderlands of poverty, and in these days of rapid communication it can penetrate by such undreamt-of and indefeasible channels into the very strongholds of the high and mighty of the land, that if self-preservation be really held by some to be the first law of nature, that very consideration alone should bring moneyed and energetic recruits to that band of excellent gentlemen who act on the higher and diviner law, and who, like Abou Ben Adhem, in Leigh Hunt's beautiful poem, "Love their fellow men."

Carleon.

THE CRYSTAL PALACE ENGINEERING SCHOOL.

The certificates gained by the students at this school during the summer term were distributed on Saturday by Sir James N. Douglass, Engineer-in-Chief to the Trinity House. In opening his address, Sir James expressed his satisfaction at finding the practical nature of the training at this school, for he held that real hard work was the foundation of success in the profession. He believed it to be the backbone of his own career. As an illustration of what he meant as real work, he alluded to a practice of this school which he thought admirable, viz., the making of a fictitious order for some part of an engine or other work, the design and construction of which were carried out from beginning to end by the students. The Civil Engineering students were engaged in such works as the preparation of plans for Parliament, the making of plans, calculations, and estimates for an imaginary railway and dock, and the actual survey of existing engineering works. He was particularly interested in the thorough nature of this training, and congratulated the principal of the school upon it. In the colonial section, where young men are prepared for life abroad, he was glad to find upon inquiry that the students were taught the use of the soldering-iron, for such tools must always be ready to the hand of the colonist. He had often been struck at the facile way in which the gipsies, with no tools other than a pair of pliers and a soldering-iron, made works both of use and beauty, and he failed to see why other people should not acquire the ability to do the same. At any rate, he would be well assured that this should be the case with his own sons.

The report, which was read by Mr. F. K. J. Shenton, showed very satisfactory work. The Lecture examination of the term has been on "Railway and Dock Work," and of twenty-one students eligible, sixteen have passed with success. The first places were obtained by A. J. Allen, G. C. Borton, and D. Allport, with 212, 196, and 184 marks respectively out of 277. The first places in the drawing-office were gained by F. E. Ross, D. Allport, and A. J. Allen; in the pattern-shop, by G. C. Borton, F. J. Piggott, and C. T. Spencer; and in the fitting-shop, by J. R. Pratt, J. A. W. Brunton, and F. N. Dymond. In the second year's course, the civil engineering section, the chief honours were taken by R. P. Barnes, J. R. Crook, H. Skinner, E. S. Tiddeman, and A. H. Winfield. The good positions attained by the school was indicated by Mr. J. W. Wilson, the principal, who gave a recent case that had come under his notice.

In proposing a vote of thanks to the examiners of the term, Mr. James Cleminson, M.I.C.E., and Mr. W. Lawford, M.I.C.E., Mr. Shenton said that he attributed much of the success of the school to the great aid that had been given by eminent men in the profession.

The proceedings terminated with a vote of thanks to Sir J. N. Douglass, who said in reply that he could, on behalf of the council of the Institution of Civil Engineers, assure the directorate of the school and its pupils of the good feeling of that body to them, and of the readiness to aid they would always find in its members.

COST OF ROAD WATERING IN SOUTH LONDON.

At a meeting of the Lambeth Vestry, held on the 10th inst., Mr. Dunkin, chairman of the special committee appointed on the question of road-watering, reported that they had fully considered the question which was referred to them by the vestry, as to the expediency of having the water for road-watering charged by meter for the future, and not by mileage, as at present. The present arrangement, the report stated, involved an annual payment of 1,550*l.*, and an additional sum of about 135*l.* for the maintenance of stand-posts, to the Lambeth Waterworks Company; and to the Southwark and Vauxhall Company a yearly sum of about 880*l.* The committee caused negotiations to be opened with both companies as to the terms and conditions on which they would supply the vestry with water by meter. Both the companies expressed a dislike to the proposed arrangement, pointing out in their replies that in their judgment it would be better that the old arrangement of mileage rates should be continued. Eventually, however, the Lambeth Company offered to supply the water by meterage, for the lower districts, at rates varying from 8d. to 1s. 3d. per thousand gallons, and for the upper districts at rates varying from 1s. to 1s. 6d. In the case of each district, each stand-post was to be charged as a separate supply, 30s. each to be paid for fixing each meter. In the lower district, a minimum rate of 2*l.* 10s. per quarter, should the charge for water actually consumed not reach that sum; and in the upper district, a minimum rate of 3*l.* 15s. per quarter. As the vestry have in the lower district forty-eight stand-posts, and in the upper district forty-two stand-posts, this minimum rate alone would come to 1,110*l.* per year. The committee, in their negotiations with the Lambeth Waterworks Company, tried to get the company to treat the entire water consumed by the vestry as one supply, but this the company refused to do, and insisted upon the quarterly minimum for each stand-post. The negotiations with the Southwark and Vauxhall Waterworks Company resulted in their offering the vestry an arrangement precisely similar to the arrangement offered by the Lambeth Waterworks Company for the lower district; that was, at rates varying from 1s. 3d. to 8d. per thousand gallons, according to supply taken, each stand-post being treated as a separate supply, with a minimum of 2*l.* 10s. per quarter, which would give a minimum of 430*l.* per year for the Southwark and Vauxhall Waterworks Company, as there are forty-three stand-posts. The committee sought information from adjoining parishes, as to the terms on which they obtained water for road-watering. The general replies from the parishes stated that the alteration to meterage caused a saving to the parish, but it was believed

in all cases the former rates of mileage were greater than those paid in Lambeth. On referring to the special Acts of Parliament of the Lambeth Waterworks Company, there was no scale given for supply of water by meter, section 38 of the company's Act of 1848 only providing that water for other than domestic purposes may be supplied by agreement. On referring, however, to the Southwark and Vauxhall Waterworks Company's Act of 1852, it was found that by section 57 the company are bound, at the request of any owner or occupier of any premises situate in or adjoining any street in which any main or service pipe was laid, and who required a supply of water by measure for purposes other than the purpose in respect of which rates were by the Act provided or limited, to afford a supply of water, by meter or other fit and sufficient instrument so made for measuring and ascertaining the quantity of water so supplied, and the company might charge for such supply not exceeding the following rates, viz. :—Not exceeding 50,000 gallons, 9d. per 1,000 gallons; exceeding 50,000 and not exceeding 100,000, 8d. per 1,000 gallons; exceeding 100,000 and not exceeding 200,000 gallons, 7d. per 1,000 gallons; exceeding 200,000, 6d. per 1,000 gallons, with a minimum of 25,000 gallons per quarter, which would give a minimum of 18s. 9d. per quarter. The scale given by this section was much more favourable to the consumer than the scale offered by the Southwark and Vauxhall Water Company to the vestry, the scale of the section varying from 9d. to 6d. per 1,000 gallons, with a minimum of 18s. 9d. per quarter, whereas the scale offered by the company was from 1s. 3d. to 8d. per 1,000 gallons, with a minimum of 2*l*. 10s. per quarter. The scale as contained in the above section was pointed out to the company, and they had been asked to supply water for road purposes on the scale given in the section; but this the company had declined to accede to, and they insisted upon the higher scale before set out. Under these circumstances, the committee thought it right to be advised by counsel on the powers of the vestry to enforce an equitable arrangement by meter against the two companies, and a case was accordingly laid before Mr. Poland, and he had advised that, under the combined operation of the company's special Acts, the Waterworks Clauses Act, 1847, and the Railway Clauses Consolidation Act, 1845, the vestry could have the rates settled by a police magistrate, and they recommended that the clerk be authorised to instruct Mr. Poland to appear on the summons. Should the decision of the magistrate be in favour of the vestry, the committee then recommended that similar proceedings should be adopted against the Lambeth Waterworks Company.

Mr. Dunkin, in moving the adoption of the report, stated that the committee had experienced great difficulty in dealing with the water companies, who had shown considerable reticence in regard to the questions put to them. Of course the companies had a great objection to the proposed alteration, particularly in regard to the adoption of the meter system, which would tend to reduce the receipts of the companies from 3,000*l*. to about 1,000*l*. per annum, as far as the parish was concerned. The parish was at the present time assumed to be using 40 millions of gallons of water annually; but really there was no reliable record of the quantity consumed. The parish of Newington had lately adopted the meter system, with the result that the amount paid for watering the streets was reduced to something like 380*l*. per annum. As a matter of fact, the cost of the water consumed by Newington was 13*l*. per mile, while Lambeth Vestry paid at the rate of 25*l*. per mile. If the vestry adopted this recommendation of the committee, they would, while reducing the cost of road-watering, really know what they paid for.

The report was adopted.

Bristol Tramways.—The directors have accepted the tender of Mr. A. Krauss, contractor, &c., Bristol, for laying the new double line between the city and suburb of Redland, about three miles and a quarter, of single tramway. Mr. Kincaid, of London, is the engineer for the same. The works will have to be commenced in six weeks, and finished within nine weeks from the commencement. The contractor (Mr. Krauss) is already well known in connexion with the lines constructed at Bristol, Bath, York, &c.

STRAIGHTENING THE SPIRES OF THE ST. MARIENKIRCHE AT LUBECK.

The St. Marienkirche or Church of St. Mary is beyond question the finest of all the sacred edifices in the ancient Hanseatic port and free city of Lubeck. It was erected in 1304, and is built of brick in that particular Gothic style which is frequently met with on the shores of the Baltic. The church has three naves, the central one being of the unusual height of 127 ft. The two towers, which form so conspicuous a feature of the city, are no less than 407 ft. high. For some time past these have required new roofing, but before the work was commenced it was determined, after much discussion, to perform on them a preliminary operation of a somewhat hazardous and uncommon description. Every visitor to Lubeck will have noticed that the two spires are tilted very considerably out of the perpendicular. The height of the tower from the ground to the commencement of the spires is 190 ft., while to the top of the spires the distance is 217 ft. further, making the total elevation as above stated, 407 ft. The top of the southern spire has for years inclined to the south and west. The deviation from the perpendicular was 12 ft. towards the south and 9 ft. to the west. The rafter work dates from the year 1350. The operation which it was decided to attempt was to bring this spire into its original vertical position Not a few professional men predicted that the result would be a disaster. However, it was remembered that in the year 1866 a Lubeck builder, Herr Albrecht Grube, had actually performed a straightening operation upon the leaning southern tower of the Lubeck Cathedral with perfect success, and accordingly the authorities were not to be deterred from attempting the same thing with the spires of the Marienkirche. The operations on the southern spire were commenced some time ago, and last week were completed with perfect success. They were carried out by a Lubeck carpenter, Herr Krause, under the direction of a Building Inspector of the city, Herr Schwiening, who promises to publish a detailed description of the method he adopted in executing the work. All that is at present known on this point is that the straightening of the spire was effected by help of a number of small iron screws. In consequence of this success it has been determined to proceed in like manner with the similarly leaning northern spire of St. Mary's.

EXCAVATIONS AT LEWES.

The *Sussex Advertiser* announces that excavations of a highly-interesting character are now on the point of being undertaken in the grounds of the ancient Priory of St. Pancras, at Lewes, under the direction of Mr. Somers Clarke, jun., F.S.A., and under the local supervision of Mr. W. H. St. John Hope, of Cambridge, whose name is well known to antiquaries. The researches promise to be of national interest. The Priory of St. Pancras, founded by William de Warrene and Gundrada, is one of the most ancient specimens of Norman architecture in this kingdom. Considerable historical interest attaches to the building, partly on the ground that it is one of the very few houses of the Cluniacal order once established in this county. The Cluniacs were noted for the splendour of their appointments, the magnificence of their churches, and the openness of their hospitality. The great Monastery of Clugny, in Burgundy, possessed a church which was exceeded in size by few, if any, in Europe. Its plan presented the unusual feature (in France) of eastern and central transepts; a plan we find in England, at Canterbury, Lincoln, Beverley, and several other places. It is evident that the great church at Lewes was planned in the same way. The foundations of the eastern portion of the great church, and also part of the chapter-house, were laid bare in the year 1847, at the time of the construction of the Brighton and Hastings Railway. The bones of the noble founders were also discovered. Since then nothing has been done. It is, however, sufficiently evident, from an examinatiou of the remains, and a comparison with others of a somewhat similar nature, that beneath the surface must lie a large portion of the nave and choir of the church, together with the bases of the western towers; also the substructures of the dormitory, refectory, infirmary, and other important adjuncts connected with a monastery of the first importance. A rough description, by Portenari, who superintended the demolition of the church in 1537, gives a list of the number of pillars and the dimensions of certain parts of the building. It is now intended to open up the rest of the ruins. The work will be watched with keen interest by archæologists. Mr. Somers Clarke appeals for funds to enable him to carry out the undertaking. Considering the national importance of the excavations, such funds ought to be forthcoming from a wider area than the county which they immediately concern. The Society of Antiquaries and the Sussex Archæological Society would probably help.

THE GREAT INTERNATIONAL FISHERIES EXHIBITION, 1883.

This exhibition, the preparations for which are now being vigorously pushed forward by influential and energetic general and executive committees, promises to be fully worthy of its title, as above set out. It has for its patron her Majesty the Queen, and for its president H.R.H. the Prince of Wales. The long list of distinguished and representative vice-presidents is headed by H.R.H. the Duke of Edinburgh, who, it need hardly be said, takes a special and active interest in the undertaking. The scope of the exhibition is wide, embracing as it does everything relating to the culture, preservation, capture, curing, transport, sale, and consumption of fish. In connexion with recent discussions as to fish-market accommodation in London and elsewhere, we have lately been assured that "the harvest of the sea" is practically unlimited; nevertheless, we know that fish is not always obtainable in the market at so cheap a rate as could be desired for so important a food-staple. The coming exhibition is eminently calculated to promote a better state of things in this respect, and therefore we need scarcely bespeak for it the best consideration of our readers.

The Exhibition will include, in Section I. of Class I., ships and boats of all kinds coming under the denomination of fishing craft (shown by models or otherwise); fishing gear, tackle, and appliances; models of harbours, piers, or slips for fishing purposes; appliances and methods for breaking the force of the sea at the entrances of harbours and elsewhere; methods of protecting submarine cables from injury by fishing operations; and a number of other matters connected with sea-fishing too numerous to mention here. Section II. of the same class is assigned to fresh-water fishing. Class II. will seek to illustrate the economic condition of fishermen, and will include models and plans of dwellings for those "toilers of the sea." Class III. will exemplify the commercial and economic aspects of fisheries and industries connected therewith, and will include models of fish-curing establishments, methods of preserving, packing, and cooking fish, and numerous illustrations of the industrial uses to which what may be called "residual products" can be put. An important division of this class will be that concerned with the sale and transport of fish, embracing as it will all kinds of appliances for carrying fish and for preserving it during transport or otherwise, together with models and plans of fish-markets and their accessories. Class IV. will be set apart for fish-culture, and will illustrate, partly by models and drawings, the varieties of fish hatching, breeding, and rearing establishments, with all apparatus and implements connected with the same. Class V. will be allotted to natural history; Class VI. to the history and literature of fishing, fishery laws, and fish commerce; while Class VII. will comprise loan collections coming within the scope of any of the foregoing classes.

It is proposed that the exhibition shall be opened on May 1st, 1883, in part of the Horticultural Gardens, South Kensington, and the surrounding International Exhibition Galleries. The exhibition is to remain open for not less than six months. There seems to be ample justification for the adoption of the word "International" as part of the title of the exhibition, for we learn that the Government of the United States, recognising the importance of the objects in view, has voted a fund of $50,000 for the expenses of the American section of the exhibition, and has applied for a space of 10,000 square feet. The Government of the Netherlands and that of Norway and Sweden have also promised their earnest co-operation. From the

colonies, too, satisfactory replies have been received, especially from Canada and New Zealand, these colonial Governments having each already voted a grant in aid of the objects of the exhibition.

Conferences are proposed to be held for the purpose of reading and discussing papers or essays on subjects connected with the Exhibition, and a considerable number of money prizes are offered for prize essays on certain specified subjects. In addition to the gold, silver, and bronze medals and diplomas of honour which will be awarded to exhibitors, a large number of special money prizes will be given for specific objects. A list of these, as well as of the subjects for prize essays, together with the regulations to be observed by exhibitors, may be had by those interested on application to Mr. J. W. Mollett, Secretary to the Executive Committee of the Exhibition, 24, Haymarket. Mr. Mollett, it should be stated, has been appointed secretary in consequence of the resignation by Sir B. T. Brandreth Gibbs of his executive functions as director and secretary, but the Executive Committee express their pleasure that they will have the benefit of his assistance and advice as one of the vice-presidents of the Exhibition.

FULHAM INFIRMARY.

At the last meeting of the Fulham Board of Guardians, a letter from the architects, Messrs. Giles & Gough, was read, stating that their plans would be ready next week, and asking whether they should be sent on to the Local Government Board before coming before the Guardians. It was decided that the plans should go at once to the Local Government Board.

Twenty-five applications were received for the post of quantity surveyor for the new building, including several from provincial surveyors. Messrs. Maughan & Cuxson offered to do the work for ½ per cent.; Messrs. Strudwick & Mennie for ¼ per cent. (or a lump sum of 250*l.*); Mr. Wall, Mr. Withers, and others for ¾ per cent.; Mr. Jackson, Mr. Davis, and others for 1 per cent.; and Mr. Hisben for 1¼ per cent. Most of the remainder did not name any rate. The Board, having resolved that the remuneration should be at the rate of not more than 1 per cent., the following six firms were selected for voting upon:—Mr. Jackson, Messrs. Lansdowne & Harris, Maugham & Cuxson, F. Miller, Quilter & Hardcastle, and Strudwick & Mennie.

The choice ultimately fell upon Messrs. Quilter & Hardcastle, who were appointed subject to their agreeing to carry out the work at a charge not exceeding 1 per cent. upon the outlay.

ABERDEEN.

Art Gallery.—At a special general court of the president and governors of Robert Gordon's College, held on the 4th inst., the president—Lord Provost Esslemont,—made an official statement of procedure relating to the steps which are being taken for the establishment in Aberdeen of an art gallery and museum, observing that the Finance Committee of the Art Institution had got together a sum of 10,000*l.*, and that they considered themselves in a position to proceed with the erection of the building. The question was considered by the gentlemen present in an informal way, the result being that the governors resolved to communicate with the Museum Committee on the subject in order to ascertain whether they desired to feu ground, and if so to what extent, upon the property belonging to the college.

Proposed City Improvements.—At the meeting of the Town Council on the 7th inst., Lord Provost Esslemont, who presided, moved that it be remitted to the Improvement and Finance Committees to consider and report as to the propriety of making application to Parliament in the ensuing session for a City Improvement Bill, also as to the improvements to be included in the scheme and the means of defraying the cost. In the Improvements Bill referred to is embodied a scheme for a considerable extension of the city boundary, and for the construction of several new thoroughfares in different parts of Aberdeen. Provision is made for the construction of a wide street towards the Aberdeen Links, in direct line with Castle-street, at the junction of which with the Links it will verge into a roadway encompassing the present racecourse, and leading by a drive to the north pier on to Donmouth and Bridge of Don. This drive was suggested some five years ago by Sheriff Dove Wilson as part of a scheme of improvements laid before the St. Nicholas Association, as to whose objects we have informed our readers. The proposed carriageway along the bank of the Dee, from the Suspension Bridge to the Allanvale Cemetery, is another feature of the scheme. It is also proposed to ask powers from Parliament for the widening of Schoolhill, and for the construction of a broad street carried on a viaduct to the northern end of Union-terrace. In submitting his motion, Lord Provost Esslemont said he thought no city that had gone on making good lines of thoroughfare had ever regretted doing so. At one time a considerable expense had been brought on the city by the carrying out of the magnificent scheme for the making of Union-street, which was constructed at a very great cost, but he was sure there was now no citizen who did not consider that it was the very best thing that could have been done. Other large towns had been moving in this direction of city improvements, and Aberdeen should not lag in the rear. Baillie Donald seconded the adoption of the motion, which was unanimously approved.

BUILDING PATENT RECORD.*

APPLICATIONS FOR LETTERS PATENT.

3,719. W. H. Avis, Polegate. Folding seats. August 4, 1882.

3,737. B. J. B. Mills, London. Ceramic composition. (Com. by F. Gillet, Paris.) August 5, 1882.

3,741. A. Bouquié, Paris. Manufacture of bricks, tiles, pavings, &c. August 5, 1882.

3,749. A. M. Clark, London. Fabric for wall-hangings, &c. (Com. by A. Hutchinson, Paris.) August 5, 1882.

3,758. A. R. Harding & J. W. Harding, Leeds. Apparatus for the ventilation of railway carriages and buildings, &c. August 7, 1882.

3,775. J. C. Blomfield & J. McGurn, Fermanagh. Manufacture of bricks, tiles, or slabs. August 8, 1882.

3,783. B. D. Healey, Brighouse. Asphalte apparatus. August 9, 1882.

3,793. J. S. Willway, Bristol. Door mat and scraper combined. August 9, 1882.

3,811. C. H. Southall, Leeds. Apparatus for cleaning windows. August 10, 1882.

3,816. H. J. Haddan, London. Stoves. (Com. by D. M. Graham, Massachusetts, U.S.A.) August 10, 1882.

3,817. H. J. Haddan, London. Apparatus for securing doors and windows against burglars. (Com. by W. Kilian, Berlin.) August 10, 1882.

NOTICES TO PROCEED

have been given by the following applicants on the dates named:—

August 8, 1882.

1,652. J. J. Wheeler, London. Curbs of roads and footpaths. April 5, 1882.

1,655. H. Conolly, London. Waterclosets. April 5, 1882.

August 11, 1882.

1,695. C. H. T. Beamish, Queenstown. Construction of breakwaters, retaining-walls, &c. April 8, 1882.

3,353. G. Dalton, Leeds. Brick-making machinery. July 14, 1882.

ABRIDGMENTS OF SPECIFICATIONS.

Published during the Week ending August 12, 1882.

5,725. M. B. Nairn, Kirkcaldy. Manufacture of linoleum.

This machine automatically mixes the cement and ground cork in specified proportions. Dec. 30, 1881. Price 6d.

5,747. A. M. Clack, London. Roofs and coverings for protection of buildings in course of construction, &c. (Com. by A. C. de Barbaran, Paris.)

Light vertical iron stancheons are erected outside the walls, so made that as the wall is raised the stancheons can be lengthened. These support a roof which travels in guides on the stancheons, and is raised by chains as required. The stancheons can be clamped to the walls to support them. Dec. 31, 1881. Price 8d.

30. W. W. Hughes, London. Fire-grates.

The basket has bars all round, and an air-flue is formed round the back and sides to support combustion. (*Pro. Pro.*) Jan. 3, 1882. Price 2d.

33. S. L. Hunt, London. Street-cleaning and sweeping apparatus.

This consists of a horizontal cylinder from which a segment is cut on one of the surfaces of which is a metal plate and on the other an india-rubber plate. These are brought to bear on the ground as required. Jan. 3, 1882. Price 4d.

42. E. G. Lakeman, Modbury. Stoves and furnaces.

The products of combustion are conveyed from the fire through a flue which passes down outside the stove, and up again through the fire. The flue is here perforated and the smoke, &c., is consumed. Jan. 4, 1882. Price 6d.

54. J. Wetton, Abergavenny. Chimney-pot.

This consists of two cylinders, the internal one forming the smoke-flue. The outer cylinder is longer than the other, and is raised a little at its base so that a current of air is induced upwards into the space between the two cylinders. (*Pro. Pro.*) Jan. 5, 1882. Price 2d.

76. J. H. Johnson, London. Domestic fireplaces. (Com. by M. Perret, Paris.)

These consume anthracite coal. The back and sides are solid, and a loose slab is arranged in close proximity to the upper surface of the fuel, leaving only a narrow slit in the fore part of the fire-place for the escape of gas to the chimney. This slab can be raised or lowered as required. The upper part of the front of the grate is closed by a mantle. Jan. 6, 1882. Price 6d.

81. J. L. Fordham, London. Preparation of materials for facilitating the preparation of whitewash and distemper.

The materials are size, glue, gelatine, and whiting, which are mixed in a powdered state, and can be made ready for use by adding water. Jan. 6, 1882. Price 4d.

96. S. Collett, Willenhall. Lock and latch spindles.

To enable the spindle to be used for doors of different thicknesses, both ends have threaded angles, and when the handles are screwed on, a screw passes through the handle, and the spindle into the opposite side of the handle. (*Pro. Pro.*) Jan. 7, 1882. Price 2d.

112. H. J. Haddan, London. Apparatus for making bricks. (Com. by L. Jäger, Ehrenfeld, Cöln, Germany.)

This machine is actuated by hand power. Three boxes are arranged radially round a vertical post, and a long lever presses the brick in one box while it lifts a brick out of the second. At the same time the third box is being filled. The lever is then lifted, and the form turned round by hand, bringing another brick to be pressed. (*Pro. Pro.*) Jan. 9, 1882. Price 2d.

121. A. C. Engert, Bromley-by-Bow. Stoves or fire-grates.

The fuel-holder is in form of half a barrel divided longitudinally, and is mounted on pivots so that it can turn on a horizontal axis. Bars are placed in front of the grate. The holder is completely filled with fuel which is lighted at the front, and as the fuel burns away, the fuel-holder can be turned. Jan. 9, 1882. Price 6d.

209. T. R. Shelley, Smethwick. Glazing greenhouses, conservatories, &c.

The glazing bar has a middle vertical web rising above the glass. In the lower supporting jaws are grooves for receiving vulcanite or other packing, on which the sheets of glass rest. Loose stops are passed through the web and can be turned down to hold the glass. Jan. 14, 1882. Price 10d.

* Compiled by Hart & Co., Patent Agents, 28, New Bridge-street,

THE GERMAN BRICK-MAKING INDUSTRY.

Over-production of bricks has been a source of complaint amongst the brickmakers in the neighbourhood of Berlin, and a meeting was held some weeks ago to devise a remedy for this acknowledged evil. General approval was expressed of the suggestion made that the cessation of work for the season should take place on September 15th, being one month earlier than usual. By this means the equilibrium of demand and supply might be restored, it was considered. A committee was appointed to deal with the question in detail, and to report to another general meeting of the trade to be held at an early date.

PRIZES FOR ARCHITECTS.

Sir,—I think the following is worthy of a space in your miscellanea as a companion advertisement to that of the Guardians of the Kidderminster Union. In my opinion (if anything) it surpasses in audacity and cool impudence anything yet published. And (as you put it) this conduct can only be justified by the fact that the invitation has been responded to.

The building for which plans are invited will cost at least 2,000*l.* Thomas Kissack.

"TO ARCHITECTS.

The Guardians of the Ormskirk Union are desirous of receiving COMPETITION PLANS for buildings to be used as Vagrant Wards, Relief Offices, and Dwellings for Officers.

First prize, 5*l.* 5s.; second prize, 2*l.* 12s. 6d.

All the plans sent in to become the property of the Guardians.

The ground plan may be seen and further information on application at No. 53, Sefton-street, Southport.

Plans to be delivered on or before the 1st AUGUST next, at 53, Sefton-street, aforesaid.

WILLIAM PARR,
Clerk to the Guardians."

THE HYDE PARK CORNER IMPROVEMENT SCHEME.

In the House of Commons on Saturday last, on the resolution authorising the vote for the Royal Parks and Pleasure-grounds,

Lord Elcho said that this vote of 3,000*l.*, though it came under the general head of Royal Parks, was practically for the removal of the reservoir at the west end of Constitution-hill as part of the plan for the improvement of Hyde Park Corner. The question was where the reservoir was now to be placed, and until the House knew that it would be sanctioning a vote of which it did not know the meaning. He believed it was intended to place it in Hyde Park, where for a long time to come, until it was covered by trees, it would necessarily be a most unsightly object.

Mr. Shaw-Lefevre said that it was intended to remove the reservoir to Hyde Park, but the actual spot was not yet settled.

Lord Elcho said that was exactly the fault that he found with the proceedings of the Government. The whole plan should have been settled and explained to the House before the vote was asked for; but, as things were, the House was called upon to sanction a plan without an opportunity of considering it. As far as he could judge, the proposal of the right hon. gentleman would fail to diminish the plethora of traffic at Hyde Park Corner, would disfigure rather than embellish that part of the metropolis, and, if it did not succeed, would do irremediable damage. The stoppages in the traffic were at Hamilton-terrace and at Hyde Park Corner. The plan of the First Commissioner left the width of Piccadilly from Park-lane to the Corner the same as now, therefore the congestion would not be relieved at all. But after he had gone to the expense of a model and of plans, and had got the promise of 20,000*l.* from the Metropolitan Board of Works, and of 3,000*l.* from the Duke of Westminster, he amended his plan. When he had done all, he did not meet the block that had to be dealt with. He had to go to the Board of Works to ask them to widen his plan, thus confessing an oversight on the most important point. The Council of the Royal Institute of British Architects had considered the First Commissioner's model and plan, and they pointed out that there was no indication of an increase of width at Hamilton-place. Although he had since proposed to widen Piccadilly, the extra width would only be that of a footpath, and this was quite inadequate. But even his amended plan would not meet the difficulty. He ventured to call the attention of members to what he denominated a rival revival of earlier plans, and, as the right hon. gentleman would not allow it to be exhibited along with his own, he had obtained permission to place it in the cloak-room, where lithographed copies might be obtained. This combination of plans was to be found in the office of the First Commissioner. If it were tried and failed, there was nothing in it to prevent the ultimate adoption of the right hon. gentleman's plan. It divided itself into two parts. On the north of Piccadilly there would be a new road in the park from Stanhope-gate to the Corner, and the present road, with a new opening into Park-lane, would be made a street outside the Park. South of Piccadilly from Hamilton-place a new road would be made to Grosvenor-place, and at the intersection of Constitution-hill there would be a bridge. A temporary bridge might be constructed for a trial, and the permanent structure might be made as ornamental as possible. This plan would leave the reservoir and the Arch untouched, and it would relieve both Hamilton-place and Hyde Park Corner, giving a continuous route to traffic from the north to Victoria Station and the East. The plan he recommended would be an ornamental one, and would greatly facilitate traffic. By it the Duke of Wellington's arch would remain untouched, and the hospital would not be interfered with.

Mr. Shaw-Lefevre said that the removal of the reservoir had long been considered desirable. It supplied the public offices with water, and it was expedient to increase the pressure of water by removing it to a higher point in Hyde Park. It would not be a disfiguring object, as it would be almost wholly concealed from sight. With respect to the main part of the scheme, he must remind the House that this subject had exercised the minds of successive Commissioners and of the House for many years past. When it became his duty to deal with it, he had come to the conclusion that that which he proposed was at once the boldest and the most certain to afford a remedy, and the most likely to obtain the various consents. The essential feature of that plan was the cutting off the corner of the Green Park in a line from Hamilton-place to Halkin-street, and the promotion of an open *place* in which as many roads could be made as would properly distribute the traffic and remove the block. It was one condition of the plan that the Wellington Arch should be removed from its present position to the point at which Constitution-hill in future would meet the open *place*, about 100 yards to the south of its present situation, where it would form the royal entrance to the Green Park. It was said by some that the general features of the scheme could be carried out without the removal of the arch. That was not so, first, because if the arch were left where it was, it would not be possible to widen the upper part of Grosvenor-place, and without this widening the block could not be removed; and secondly, because, if left in its present position, the gradients or other conditions would require that the road between the two parks should not pass under the arch, but round one side of it, and through one of the side gates into Hyde Park, and thus all the dignity of the approach and the meaning of the arch would be lost. The noble lord had objected that the arch in its new position would not be square with the gateway to Hyde Park and to other buildings. This was true; it would be at right angles to Constitution-hill, but would not be parallel or at right angles to other buildings. This might be a serious defect if it were at all near to other buildings, but it would be at a considerable distance, and would no longer be a part of the group of arches at the entrance of Hyde Park. He had very high artistic authority for saying that the effect would not be bad, but, on the contrary, decidedly good. The word askew was a formidable one, but there was no canon of art against buildings being askew to one another; on the contrary, the greatest artists in architecture the world had known,—namely, the Greeks,—were of an opposite opinion; they rather avoided placing buildings at right angles or parallel to one another, and in the Acropolis he need hardly remind hon. members that the group of buildings the most celebrated in the world were purposely not placed at right angles or parallel to one another. The noble lord had called to aid the Institute of Architects, and had claimed that they had condemned the official plan. It was true that some days ago the council of that Institute came as a deputation to him and presented to him an alternative plan prepared by their secretary. They told him, however, that they were not united on the subject, and he had no difficulty in proving to them that there were more serious objections to the plan of their secretary, and they left him under the impression that the majority of them were convinced. They subsequently sent a deputation to the Metropolitan Board with another plan, but this again was open to other objections, and the Board unanimously declined to adopt it. The noble lord seemed to think it a serious matter that the Institute of Architects should express an opinion. He could not, however, accept their council as an arbiter in such matters. Till the present time, the Institute had never undertaken to advise the Government or the public in such questions. But, though he had not consulted the Institute of Architects in its collective capacity, he did not adopt this scheme without taking advice from a great number of persons well qualified to give opinion. He did not hesitate to say that it had been approved of by the great bulk of persons who were qualified,—by such men as the late Mr. Street, Mr. Waterhouse, Mr. Fergusson, the well-known writer on architecture, Mr. Holford, and numerous others. It had also been approved by her Majesty the Queen, who had been graciously pleased to give up a small part of the garden of Buckingham Palace. It had also been approved by the Metropolitan Board, who find the main portion of the money, and by the public Press generally. He, therefore, ventured to hope the House would not support the noble lord in his desire to postpone the scheme. It was his conviction that if this plan were postponed no other alternative would be more fortunate or more acceptable, and the only result would be that the difficulty would remain for an indefinite period unsolved and without a remedy.

Mr. Craig approved the plan of the First Commissioner of Works.

Mr. Peddie thought that, as far as the question of relieving traffic was concerned, the plan of the noble lord was the better of the two. His chief objection to the Chief Commissioner's plan was that the *place* which it would create would be cut up into too many small plots and gardens. The plan, however, might by some modifications be made much more acceptable.

Mr. Warton urged that further time should be allowed to consider this matter. There was no reason why the Chief Commissioner should press the matter on now.

The resolution was agreed to.

In the House of Lords on Tuesday,

The Marquis of Ailesbury asked her Majesty's Government whether it was seriously intended to carry into effect the alterations proposed by her Majesty's First Commissioner of Works at Hyde Park Corner; and, if so, when those alterations might be expected to be commenced.

The Earl of Milltown said that he desired to supplement the question of the noble marquis by asking whether, in the event of these proposed improvements being effected, the Government would avail themselves of the opportunity thus afforded to throw open the roadway down Constitution-hill to the public.

Lord Sudeley said that he had to state that immediately the vote was passed by the other House steps were at once taken to commence carrying out the great improvement at Hyde Park Corner. The first thing that had to be done was to remove the reservoir from its present position to a suitable place in Hyde Park; and tenders had already been invited for carrying this out. The First Commissioner had not yet decided whether the arch could be moved in one block on rollers, or whether it would be necessary to pull it down and rebuild it, but it was hoped that this matter would be settled in a few days. The Government hoped that the cutting off the corner of the Green Park would entirely remove the congestion of traffic which had for so long been a standing nuisance to that part of the metropolis, and they believed that, of the numerous schemes which had been suggested, this formation of a large *place* would be the boldest and happiest solution of a somewhat difficult problem. It was not proposed at present to open Constitution-hill to the public. The question had not been under consideration.

The Duke of Cambridge said that he was very glad that what was now proposed was to be carried out; but he was convinced that the block in the traffic at Hyde Park Corner would never be got rid of until a subway had been made from Hamilton-place, under Piccadilly, to Grosvenor-place.

The Earl of Redesdale asked whether it would not be possible to place the statue of the Duke of Wellington on a pedestal opposite to Apsley House.

Lord Sudeley said that the First Commissioner had received a great many representations respecting what should be done with the statue of the Duke of Wellington. Among many conflicting opinions, he has not yet decided what would be best to be done; but, if the arch were obliged to be pulled down, then he would take care that experiments were made to see how the Duke would look on a pedestal in the middle of the proposed "place" or similar position. If the arch were not pulled down, but were rolled into its new position without having to take down the statue, then it was probable it would be better to leave it alone. The matter was, however, still under consideration.

THOMAS EDWARDS, ARCHITECT.

Sir,—In reply to a recent communication of mine, which you were good enough to insert in the *Builder*, I have now the pleasure of stating that I am indebted to the courtesy of Mr. Thos. Ferris, of Rosewyn, Truro, for the information that Thomas Edwards was an architect from London, who built one or two mansions in Cornwall, including Tehidy, the seat of the Bassets, in the early part of the last century, and the fine house once belonging to Mr. Wm. Lemon, in Prince's-street, Truro. He was also the architect of the very indifferent spire and west front of St. Mary's Church, Truro, now removed to make room for the new cathedral there. It may interest some of your readers to know the foregoing.

Walter H. Tregellas.

THE ANCIENT MONUMENTS BILL.

In the House of Commons, on Tuesday, on the motion for going into Committee on this Bill,

Mr. Beresford Hope said he trusted this was the last time when the memorable words "Ancient Monuments Bill" would be in the paper. He congratulated his hon. friend the member for the University of London on his great success. For years he had fought by the side of his hon. friend. There was a great deal of misunderstanding about the Bill. He thought the most ridiculous of all arguments raised against it was that it was a destructive measure, for it was absolutely the most conservative measure ever brought before Parliament. It would preserve monuments of immense value from the effects of wilful ignorance and selfishness. The Bill had made its way slowly, but surely, and he was sure that when it was put in the Statute-book it would be hailed with satisfaction.

The motion was then agreed to, and the House went into Committee on the Bill.

Clause 1 was passed. On Clause 2, Mr. Shaw-Lefevre moved to add an amendment to the end, providing that the cost of the maintenance of ancient monuments should, subject to the approval of Her Majesty's Treasury, be defrayed out of moneys provided by Parliament. The amendment was agreed to, and the clause was added to the Bill.

On Clause 3, Mr. Shaw-Lefevre moved an amendment empowering the First Commissioner of Works, with the consent of the Treasury, to purchase out of moneys to be provided by Parliament any of the ancient monuments to which the Bill applied. The amendment was made, and Clause 3, as amended, was agreed to.

Clause 4 was added to the Bill, and Clause 5 was struck out. Clauses 6 and 7 were agreed to without amendment. Clauses 8 and 9 were amended and added to the Bill.

Mr. Shaw-Lefevre then brought in a new clause in place of Clause 5, and providing for the appointment of an Inspector of Ancient Monuments. The new clause was added to the Bill.

Sir J. Lubbock moved a new clause, authorising the Crown, by Order in Council, to apply the Act to any other monument of the same character as those in the schedule. The schedule, he said, was adopted from his Bill, and had been carefully drawn up by very high authorities. But it was only typical; it never pretended to be a complete list. A power of addition had always been contemplated, and his right hon. friend had kindly intimated to him that he would accept the clause.

Mr. Shaw-Lefevre said that he quite approved the new clause. It only applied to monuments of a "like character" to those in the schedule to the Bill.

The new clause was added to the Bill.

On the schedule, Sir J. Lubbock moved an amendment, standing in the name of the hon. member for Donegal, to include in the schedule the earthen and stone enclosure known as "Grianan of Aillach," in the parish of Burt and barony of West Innishowen, county Donegal. The amendment was agreed to, and the schedule was passed.

The Bill, as amended, was reported to the House, and was then read a third time and passed.

TREATMENT OF ARCHITECTS.

Sir,—I wish to bring before your notice the following facts (for what they are worth), if you care to make use of them, acting only with a view to the benefit of my profession.

It is the old story. A few weeks ago a competition was announced in your paper for a new club at Bury St. Edmund's, with the usual invitation to compete, and stating that plan of site and instructions could be obtained by applying to the secretary.

This advertisement was not continued in the following week's *Builder*, and, after application having been made more than once for the said instructions, would-be competitors were informed that, owing to the number of applications made, the competition had fallen through, or words to this effect. It since turns out that an Ipswich architect has been introduced by a "young" member of the committee, and who has straight off appointed him as architect.

I have merely to observe,—and perhaps you will agree with me,—that I think this mode of proceeding not creditable. These gentlemen have not only made use of your paper for no purpose, but have deceived architects generally. M.

LABOUR IN AUSTRALIA.

The following is an extract of a letter from Nelyambo, New South Wales, dated June 11th, 1882. May I advise "One not Blessed with Incumbrances" to go to Australia?

E. Scott.

"We want people at home to be better informed as to the resources of these colonies, and to be impressed with the fact that there is a good field for any amount of capital. And another thing we want is the stoppage of your present plan of shipping your 'ne'er-do-weels' out here; they are of no use to the colonies, and only go to the dogs at an increased pace. And another point people at home must learn is that this is by no means an El Dorado, where any fellow with a good education and *nothing else* can at once make his way. *Send us good steady skilled operatives in thousands*, but keep your surplus 'gentlemen' at home, or, rather, make them mechanics and then send them out here prepared to work with their *physical* powers. But men with education only and *no capital* are at a large discount, and every steamer makes the discount larger. We want good labourers and mechanics."

RAILWAY FARES.

Sir,—Apropos to and in illustration of your remarks on railway fares and cost of passenger transit being dependent upon long running with few stoppages, and *vice versâ*, I may mention that Messrs. Cook advertised an excursion by the Midland, from Birmingham to Scarborough and back for 5s. on Bank Holiday, a distance of 173 miles each way, or 346 miles in all, or at the rate of six miles a penny nearly. The journey out was performed in six hours, or one hour under express time, and the return journey in seven hours,—including a stoppage of nearly an hour close home on account of insufficient accommodation at the station, and consequent crowding of trains,—and without a hitch; 2,500 persons availed themselves of the opportunity of spending ten or eleven hours on the sea-coast on that occasion, and I doubt not at a considerable profit to their health and to the pockets of the promoters. I can answer for one.

E. Grimes.

BUILDING CONSTRUCTION.

Sir,—Walking out the other day, "our custom of an afternoon," we found ourselves on the outskirts of the Regent's Park, and at a garden gate we observed a curious pair of pilasters or piers, "for each seemed either." They were of that chocolate colour now so common, which gives the spectator a pleasing doubt whether the material intended is wood, stone, marble, or what else in nature or art; and upon a second glance we noted a peculiar unevenness of surface. Going near to examine, and sounding them, we found that these piers were encased with zinc, somewhat warping in the sun, and having their exteriors painted in the aforesaid chocolate with good oil and lead colour. This new form of building construction may be a hint to many, and, if duly developed, may cause this century in future times to be known as the "age of zinc," although it has been suggested in view of the present great trade in imported provisions that tin may dispute the honour. H. & R. Powell.

NEW WORKHOUSE BUILDINGS, ST. PANCRAS.

The Board of Guardians having intimated that they would themselves appoint the quantity surveyor, the Workhouse Accommodation Committee met on the 8th inst., and, after considering the qualifications and standing of the applicants (about twelve in number), selected the three following firms as fully entitled to the confidence of the Board, viz., Messrs. Maughan & Cuxson, Messrs. Sandall, Corderoy, & Farthing, and Messrs. Stoner & Sons, the votes obtained by each firm being nine, eight, and seven respectively.

The Committee's report was presented to the Board on the 10th inst., when Messrs. Sandall, Corderoy, & Farthing were appointed. The total outlay contemplated is about 100,000*l*., and the surveyor's charge allowed by the Board is 1½ per cent.

CHURCH-BUILDING NEWS.

Kennington.—Mr. W. Grantham, M.P., recently laid the foundation-stone of a new mission church in Pilgrim-street, Upper Kennington-lane. The building, which will accommodate between 400 and 500 people, is intended to supplement the ministerial work carried on in the parish of St. Mark's, Kennington, by the Rev. Mr. Montgomery, the vicar, and the Rev. Tilden Smith, his curate. A freehold site has been secured adjoining the gas-works, and the cost of the building, inclusive of the price of the land, will be about 1,800*l*. The building will be composed of red bricks and picked stocks. It will comprise a vestry and two class-rooms,—the latter being capable, when occasion demands, of being thrown open so as to augment the accommodation of the chief room, which will be 55 ft. 6 in. in length by 28 ft. broad. The architect is Mr. W. H. Harrison, the builders are Messrs. Andrew & Nanson, of Brixton, and Mr. Handley is clerk of the works.

Worthing.—The foundation-stone of a new church at Worthing, to be called Holy Trinity Church, was laid on the 10th inst. in the presence of a large number of spectators, by Mrs. Loder, wife of Mr. R. Loder, M.P. The church will be erected of red brickwork, both inside and out, with Bath stone dressings, and red tile roof; it is to be in the Early English style, and will have a tower and spire as soon as funds will allow of its entire completion. The dimensions of the church are as follow:—the length of the nave is 69 ft. 2 in., inside measurement; chancel, 28 ft. 5 in. long; width of church, inside, from aisle to aisle, 60 ft.; and the height from the apex of the main roof to the floor line is 48 ft. The architects are Messrs. Coe & Robinson, 4, Furnival's Inn, London; the builder is Mr. Peters, of Horsham; Mr. S. R. Smith, A.R.I.B.A., is acting as clerk of the works.

Sedgley.—On the 8th inst. the foundation-stone of the new chancel for the Church of St. Mary the Virgin was laid by Mr. Alfred Hickman. The church has been built about twelve years, a temporary erection having been used for a chancel. On the north side of the chancel space is left for an organ-chamber, and on the south side for two vestries. At present only the chancel is being proceeded with, and this will afford space for eighty sittings. The erection will be in keeping with the church, of red bricks, faced with Gornal stone. At the east end there will be a tracery window erected at a height which will allow of a handsome reredos being placed below it. The work is being done by Messrs. J. Jones & Son, Sedgley, from plans by Mr. T. H. Fleming, Wolverhampton. The total cost of the chancel will be 800*l*.

VARIORUM.

"A Handbook of the Industries of the British Isles and the United States," by G. Phillips Bevan, F.G.S. (Bogue), though a small book, treats clearly a large subject. The object of the work is to explain in simple language the resources and industries of each country together with the physical and geographical causes that have led to their existence. Mr. Bevan is a practised writer, and has his subject well in hand.——"Sanitary Houses and How to select One," by F. A. Bond, M.B. Edin. Univ. (Kegan Paul & Co.), is clearly written, but very slight. After all that has been said and written on the subject, so superficial and slight an essay should not be necessary; however, as there are possibly still persons to whom it may serve as a first awakener we willingly recommend it as well adapted for that purpose. We have been saying the same things as will be found in the pamphlet for these thirty years and more, and cannot have too many assistants in the good work.——*Nature* is a weekly illustrated journal of science (Macmillan & Co.), and those who read it regularly will find themselves acquainted with all that is new in science. It well deserves the position it has attained.——*Knowledge*, conducted by R. A. Proctor (Wymans), goes on agreeably and well. Those who supposed at its starting that "stars" would too greatly prevail have ceased to think so. Everything is touched in turn, and touched with knowledge. When we find the editor quietly replying to a correspondent, "I fear it would be difficult to prove that diamonds are condensed comets," we have a good indication of his patience.—— Harper's *New Monthly*

includes under the title "Lying in State in Cairo," a full and illustrated account of the recent wonderful discovery of royal mummies and their deposition in the Museum at Boulak. Let us hope that the scoundrel Arabi, with his army, may not get into Cairo, or we may have reason to regret that the discovery was made so soon.

Miscellanea.

Electric Light Speculation: a Dividend of 100 per cent.—An extraordinary general meeting of the shareholders of the Anglo-American Brush Electric Light Company was held on the 10th inst. at the City Terminus Hotel, Sir H. Tyler presiding, for the purpose of confirming a resolution passed on the 18th of July, altering the articles of association, and providing that "The directors may from time to time, of their own authority, pay to the members, in proportion to the amount paid up, or credited as paid up, on the shares held by them respectively, such bonus and such interim dividends as in the judgment of the directors the position of the corporation justifies." The Chairman formally moved that the resolution be confirmed, and said its object was simply to enable the directors to distribute the sum of 245,000*l*., which they held at the disposal of the shareholders, and for which warrants had been prepared. That sum would furnish them with the very satisfactory interim dividend of 100 per cent. upon all they had subscribed in the undertaking. Mr. Sellon seconded the resolution. Mr. Hammond hoped the chairman would give the shareholders an assurance that there was no foundation for the statement that the company had made no profit on its manufacturing business, and that its only source of obtaining money was by the sale of sub-concessions. The chairman said that a rough balance-sheet had been prepared, and it was found by that means that there was a profit on their manufacturing business during the first six months of the year of 30,000*l*. He regretted the amount of speculation which had taken place with regard to the sub-concessions. There had been too much speculation going on, and too little real manufacturing work performed. The shares of the company, he also thought, had risen to a higher price than was justifiable. The directors could not control the speculation which was going on, but he would not encourage it by making any prophecy as to the future of the company. The resolution was agreed to.

Art-Union of London—The pictures selected by prize-holders of the Art-Union of London this year have been placed on exhibition in the galleries of the association, at 112, Strand. There are seventy-one oil-paintings and seventeen water-colours purchased with prizes ranging from 10*l*. to 100*l*. from nine exhibitions,—namely, those of the Royal Academy, the Royal Hibernian Academy, the Royal Scottish Academy, the Society of British Arts, the Grosvenor Gallery, the Royal Society of Painters in Water-Colours, the Institute of Painters in Water-Colours, the Royal Albert Hall, and the Society of Lady Artists. The choice of the prize-winners who have selected these works for themselves has fallen for the most part on sunny landscapes and domestic scenes, the collection including one or two excellent delineations of life on the Thames. The exhibition, which is free on presentation of address-card, will remain open until September 2nd. The print for the current year,—"Stolen by Gipsies: the Rescue,"—is an excellent specimen (engraved by Messrs. C. H. Jeens & Lumb Stocks, R.A.) of the work of Mr. J. B. Burgess, A.R.A. It will, no doubt, prove very popular. The cost of producing it, moreover, will be so much less than was that of the series of prints given last year, that a much larger amount will, of course, be available for the purchase of pictures.

The new Thoroughfare between Charing-cross and Oxford-street.—Steps have at length been taken for making, at all events, a beginning of this long-needed public improvement. The materials of about forty houses about Newport-market having lately been sold by Messrs. Eversfield & Horne, the structures themselves are in process of demolition, and in the course of another month a large portion of the following streets will have disappeared:—Newport-court, Little Newport-street, Market-row, Market-street, Prince's-row, Lichfield-street, Hayes-court, and Grafton-street.

North of England Institute of Mining and Mechanical Engineers.—The annual meeting of members was held in the Wood Memorial Hall, Newcastle, on the 5th inst., the president, Mr. G. B. Forster, in the chair. The secretary, Mr. Bunning, read the annual report of the finance committee, which stated that the finances of the Institute are in a very satisfactory condition. He next read the annual report of the council, which stated that the thirtieth year of the Institute has been one of uniform prosperity, the progress made has been of a permanent and solid nature, showing that the Institute is becoming more and more secured against the fluctuations of the funds derived from subscriptions. There have been many valuable additions to the library, and exchanges have been made with a great number of foreign societies. This has been done to such an extent that few, if any, libraries out of London are in possession of such valuable information respecting the progress of mining science in all countries, and this has enabled the council to publish extracts and translations from such foreign papers as seemed to deserve particular attention, which will materially add to the interest of the transactions. In this the council have been assisted by Professor Lebour, who has devoted much time and attention to this department.

Steam Wheels.—A new kind of steam-engine has been recently patented in Austria by Professor Wellner, of Brünn. The so-called steam-wheel (according to the account in the *Polytechnischer Journal*) consists of a simple water-wheel, mostly immersed in hot water in a closed vessel. Steam is admitted at the lower part, and forces the cells of the wheel upward, producing rotation. The steam fills more and more of the cells on the rising side, and at length begins to escape into the steam space above the water. Steam may either be produced directly at the lower part or conducted to the vessel from elsewhere. The upper tube for outlet of steam may lead either into the open air or into a condenser. The mechanical work consists in the ascent of the specifically lighter steam in the heavier liquid. These steam-wheels may either be used as independent motors or in connexion with ordinary steam-engines; in the latter case the escape steam of one kind of machine is utilised for the other.

The World's Production of Lead in 1881.—Herr Landsberg, the general manager of the Stolberg Company, has, in an annual report to his company, given an estimate of the production of lead in Europe for 1881. The following is Herr Landsberg's estimate for Europe:—Spain, 120,000 metric tons; Germany, 90,000; England, 67,000; France, 15,000; Italy, 10,000; Greece, 9,000; Belgium, 8,000; Austria, 6,000; Russia, 1,500; total, 326,500. Herr Landsberg estimates the production of the United States at 110,000 tons. As the output of Mexico, South America, Canada, and Australia is small, it is probably safe to assume that the world's production is about 440,000 tons of lead. This does not include China, which is a heavy consumer of lead, and is not unlikely a producer of some importance; nor does it include Japan, of whose output we have no figures. It will be seen, therefore, that the United States takes second rank among the lead-producing countries of the world.—*Iron Age*.

Light.—An installation of fifty "Swan" incandescent lamps has just been completed at No. 279, Edgware-road, for Mr. Bowron, provision merchant, who expects to save a great deal from the use of these lights, owing to the absence of heat, which, before these lights were used, caused a great amount of damage. The work has been carried out by Messrs. Edmundson & Co., 19, Great George-street, Westminster, who are also engaged in several much larger installations for several country mansions, where the absence of heat and smoke is also expected to effect a considerable saving.

Cramlington.—Extensive additions and alterations are being made to the Blue Bell Hotel, Cramlington, for Sir Mathew White Ridley, bart., M.P., from the designs and under the superintendence of Mr. J. J. Lish, architect, Newcastle-upon-Tyne.

Timber Burnt at Archangel.—Lloyd's agent at Archangel, writing under date of the 31st of July, states that a large fire occurred on the 19th of July on the timber premises of Messrs. E. H. Brandt & Co., and destroyed all their deal-yards, worth about 30,000*l*.

Exhibition and Competitions at Ghent.—The Chambre Syndicale Provinciale des Arts Industriels was founded at Ghent in 1866, with the object of "stimulating the genius of artistic creation in relation to industrial applications, contributing to popularise the study and sentiment of the beautiful in the production of industrial objects, which derive a portion of their value from their form, so facilitating and encouraging the efforts of industrial artists and artisans in the conception and execution of original works of good taste." For the present year the Chambre Syndicale announces an Exhibition of Industrial Art, to open in the halls of the Ghent Casino, on August 28, and to continue until October 18, following. Like the former, it will comprise two sections:—1. Modern, including: (*a*) a general exhibition of objects of industrial art manufactured in the country; (*b*) competitions in designs for such objects; and (*c*) competitions in manufactured objects. 2. A section of objects anterior to the nineteenth century, relating to industrial art, Belgian or foreign. Besides the prizes in the competition, medals of silver-gilt, silver, and gold, as well as honourable mentions, will be accorded to such exhibits as evince the greatest merit in design, taste, and execution, or which illustrate a new industry; while medals will also be granted to the designers of successful exhibits. Division A (*Building*) comprises (1) ornament in stone, carton-pierre, plaster of Paris, artificial stone, &c.; (2) natural and artificial marbles, pavement, &c.; (3) joinery, including doors and floors. The Président d'Honneur is M. Léon Verhaeghe de Naeyer, Governor of East Flanders; the president M. Constant Verhaeghe de Naeyer; and the secretary, M. Emile Varenbergh, Ghent.

Technological Examinations.—The directors' report of the results of the fourth examination in technology conducted by the City and Guilds of London Institute, has recently been issued. The examination was held on the evening of May 24, when 1,972 candidates presented themselves. From the returns received in November last it appears that 3,467 students were at that time attending technical classes in different subjects under the direction of the institute. As compared with last year, a great increase is observable in the results of the recent examination. In 1881 1,563 candidates were examined at 115 centres in 28 different subjects, of whom 895 passed; in 1882, 1,972 candidates were examined at 147 centres in 37 subjects, of whom 1,222 passed. The difficulty which still exists of finding competent teachers prevents the formation of technical classes in many places where such classes are greatly needed. This difficulty, it is expected, will begin to lessen with the opening of the central institution in Exhibition-road. With the view of lightening somewhat the conditions of registration of teachers, the committee have resolved to receive applications from teachers under the Science and Art Department who can adduce evidence of having acquired in the factory or workshop a practical acquaintance with the subject which they desire to teach. The report calls attention to two great deficiencies in the training of the candidates who come up for examination in technology—to their want of elementary science knowledge and to their want of skill in drawing. Of the 1,222 successful candidates, not more than 400 are entitled to the full certificate as having passed the Department's examination in the science subjects.

TENDERS

For rebuilding the Castle Hotel Tap, Porter's-lane Southampton, for Miss Drew. Mr. E. T. Howell, architect:—

Bailey	£459 0 0
Brinton & Bone	420 0 0
Rowland	400 0 0
Dyer & Son	398 0 0
Crook (accepted)	396 19 0

For steam laundry premises, Hampstead. Mr. F. A. Gosling, architect. Quantities supplied:—

Priestley & Gurney	£2,500 0 0
Hicks	2,320 0 0
Blanford & Co.	2,209 0 0
Trevecke & Co.	2,204 0 0
Niblett	2,195 0 0
Sabey & Son	2,150 0 0
Martin & Goddard	2,133 0 0
Jarvis	2,042 0 0
Jenner & Oldridge	2,040 0 0
Balaam Bros.	2,000 0 0
Richardson Bros.	1,997 0 0
Carpenter & Poole	1,968 0 0
Garraud	1,883 0 0
Sharman	1,790 0 0

For a sixty-quarter brewery at Tadcaster, with cooperage, drying-shed, stores and offices, boundary walls, &c., exclusive of plant, for Mr. John Smith. Messrs. Seamell & Colyer, architects, 18, Great George-street, Westminster. Quantities by Messrs. R. L. Curtis & Sons, London:—

Contract No. 1.—Building only.

J. Hartley, Birmingham	£28,057	0	0
W. Biscombe, York	26,563	0	0
J. & W. Beanland, Bradford	26,200	0	0
H. Lovatt, Wolverhampton	24,793	0	0
W. Nicholson & Son, Leeds	24,325	0	0
Bentley & Burn, Leeds	24,076	0	0
Illingworth Bros., Bradford	23,844	0	0
M. Wilson, Headingley	23,215	0	0
Lowe & Sons, Burton-on-Trent	23,170	0	0
W. Holdsworth, Bradford	22,658	0	0
Armitage & Hodgson, Leeds*	22,103	0	0
Kell & Chambers, Leeds	19,481	0	0

Contract No. 2.—Girders and Columns.

Head, Wrightson, & Co., Stockton	£14,032	0	0
Laidlaw & Sons, Glasgow	13,993	0	0
Thornewill & Wareham, Burton-on-Trent	13,028	0	0
Handyside & Co., Derby	12,867	0	0
Eastwood & Swingler, Derby	12,061	0	0
Bagshaw & Sons, Batley	11,160	0	0
Dawson & Nunneley, Leeds*	10,699	0	0

* Accepted.

For erecting school buildings at Hanway-place, Oxford-street, for the trustees of the Westminster Jews' Free Schools. Mr. H. H. Collins, architect, 61, Old Broad-street:—

F. Mark	£7,927	0	0
A. E. Robinson	7,836	0	0
J. & J. Greenwood	7,499	0	0
Mowlem & Co.	7,339	10	0
R. Abraham	7,330	0	0
W. Downs	7,327	0	0
Shepherd	7,298	0	0
W. & F. Croaker	7,147	0	0
Kirk & Randall	7,080	0	0
Bentley	7,076	0	0
J. Morter	7,040	0	0
Tongue	6,800	0	0
Sabey & Son (accepted)	6,498	0	0

For repairs and alterations to three houses, St. Luke's. Messrs. Gordon & Lowther, architects:—

Parrish & Hawker	£369	0	0
Symons	350	0	0
Steer Bros.	188	0	0

For alterations to "White Horse," Burdett-road. Mr. J. Hudson, architect:—

Cox	£190	0	0
Brown	188	0	0
Parrish & Hawker	180	0	0
Hearle & Son	165	0	0

For erecting new stables, Bancroft-road. Mr. C. A. Legg, architect:—

Lennard	£987	0	0
Arger	892	0	0
Bodmin	814	0	0
Swan	809	0	0
Pound	779	0	0
Lewin	765	0	0
Bragger	715	0	0
Bradmore	710	0	0
Parker	697	0	0
Sangler	631	0	0
Parrish & Hawker	625	0	0
Collins	620	0	0
Russell	619	0	0
Lusk	600	0	0
Vaughan	597	0	0
Hawkins	590	0	0!

For works at Virginia Water (house, stables, cottage), for Mr. J. H. Secker. Messrs. Edgington & Somerbell, architects:—

Harris & Sons, Tunbridge Wells	£3,554	0	0
D. C. Jones & Co., Gloucester	3,542	0	0
Willis, Windsor	3,489	0	0
G. Reavell, Staines	3,391	0	0
J. Norris, Sunningdale	3,383	0	0
Young, Westminster	3,260	14	2
Dredge, Westminster	3,197	0	0
C. Watson, Ascot	3,099	0	0
Martin, Maidenhead	3,092	13	0
Woods, Weybridge	3,014	3	6
A. L. Oades & Sons, Egham	2,915	0	0
J. Pither, Ascot	2,908	0	0
W. P. Reavell, Windsor	2,863	0	0
Kingerlee, Banbury (accepted)	2,849	0	0

For detached house, Edgeborough-road, Guildford, for Mr. Wm. Hunt. Messrs. Peak, Lunn, & Peak, Guildford, architects. Quantities supplied:—

Mitchell Bros. Shalford	£1,615	0	0
R. Pink, Milford	1,584	10	0
R. Nye, Guildford	1,552	0	0
A. W. Moon, Guildford	1,538	15	0
G. Strudwick, Guildford	1,535	0	0
Pearce & Clark, Guildford	1,499	0	0
Garnett & Mills, Guildford	1,498	0	0
J. Harris, Woking	1,444	0	0
Martin, Wells, & Co., Aldershott*	1,400	0	0

* Accepted.

For a warehouse to be built in Tichborne-court, Holborn. Mr. Robert J. Worley, architect. Quantities by Mr. R. C. Gleed:—

Hyde	£1,420	14	2
Smith	1,379	0	0
Lawrance	1,344	0	0

For twelve warehouses to be built in Leman-street, E. Mr. Robert J. Worley, architect. Quantities by Mr. R. C. Gleed:—

	Main estimate.			Terra-cotta and glazed brick facings.		
Rider & Son	£15,918	0	0	£983	0	0
Downs	15,737	0	0	910	0	0
Hall, Beddall, & Co.	15,610	0	0	230	0	0
Lawrance	14,989	0	0	180	0	0

For additions to parish church, Marvculter of Hall, and apse for organ and choir. Messrs. Ellis & Wilson, Aberdeen, architects:—

Barber & King, Aberdeen (mason work).
James Troup, Marvculter (carpenter's work).
Wm. Milne, Aberdeen (slater's work).
Simpson & Rae, Aberdeen (plasterer's work).
Ed. Donald, Aberdeen (painter and glazier's work).

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W. F. Mason, Longsight, Manchester.

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W. F. Mason, Longsight, Manchester.

For partly rebuilding and alterations to the "Elephant and Castle," Great Peter-street, Westminster, for Mr. W. Butcher. Mr. W. T. Farthing, architect:—
R. & H. Pickersgill (accepted) £1,148 0 0

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